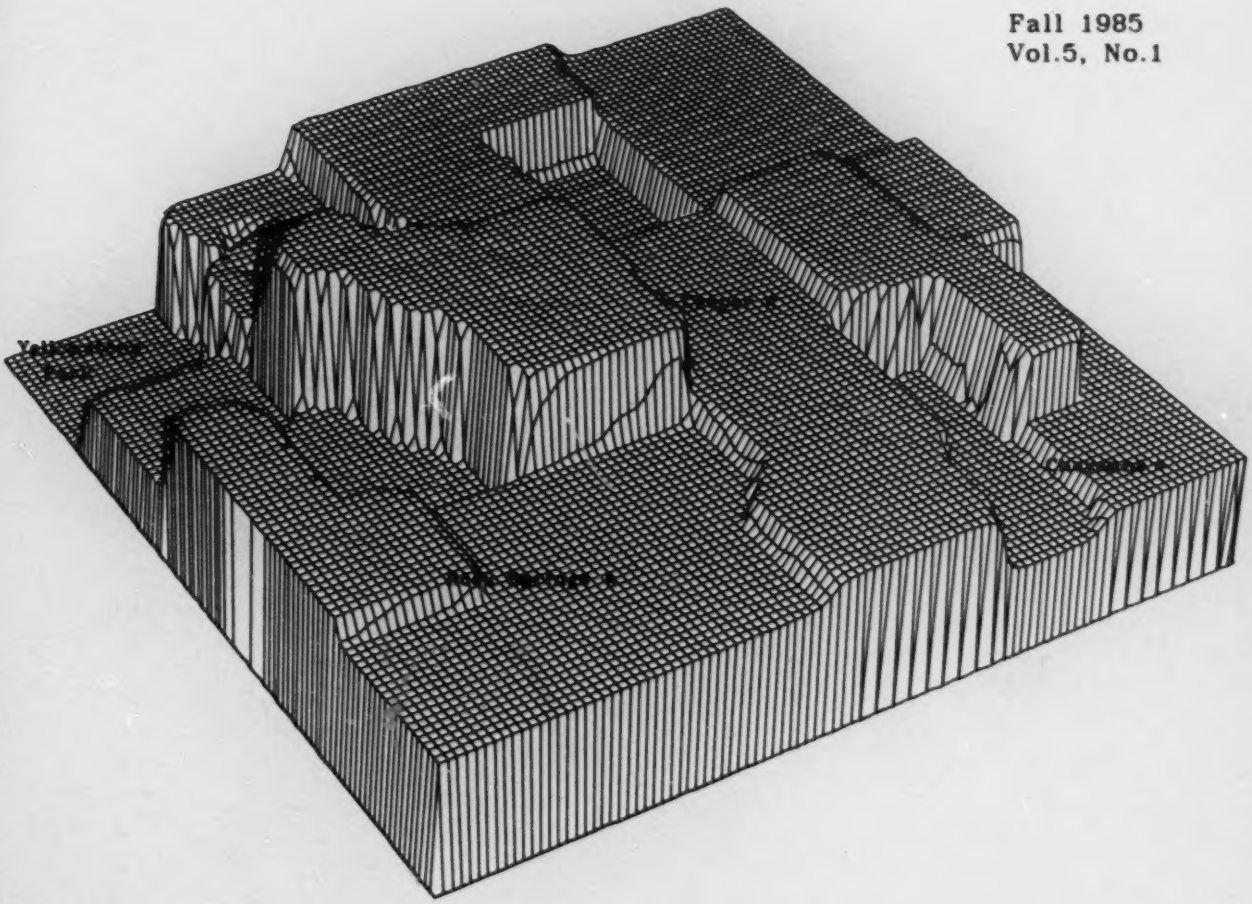
12/9/05 49350-2

WYOMING QUARTERLY UPDATE

Fall 1985
Vol.5, No.1



IPR

August 1985 County Unemployment Rates

CRIS

Census Retrieval Information Service

P.O. Box 3925
Laramie, WY 82071
(307) 766-5141

Room 302
Emerson Building
Cheyenne, WY 82002
(307) 777-7504

U.S. Census information for Wyoming is handled by the Census Retrieval and Information Service (CRIS). CRIS issues printed reports of Wyoming Census data as well as handling specific requests. Much of the population and housing data from the 1980 Census is now available.

CRIS reports now available:

		PRICE
#82-8:	Age Distribution in Wyoming,1980, August 1982, 120 pages. Analysis of age profiles in 5-year brackets. Wyoming: Comparison with USA and with 1970. Indications of net in-migration by age. Prediction of 1990 peak at ages 30-34. Counties: Maps of age distribution. Graphs of age profiles for each county. Cities: Age profile for each city.	No Charge
#5:	STF1, October 1981, 54 pages. 100% count data, 1980 population and housing: state, counties and cities.	No Charge
#6:	Laramie People Patterns, January 1982, 11 pages. Minority distribution in Laramie by zoning and by age of neighborhood.	No Charge
#83-5	May 1983, 29 pages. Labor in Wyoming, 1980, labor force participation; age of labor force occupations.	No Charge
#84-1	October 1984, 25 pages. Age and Type of Wyoming Housing, 1980, characteristics of single, multiple, and mobile housing units: age, renter-occupancy, vacancy, county growth effects.	No Charge
#84-2	December 1984, 21 pages. Poverty in Wyoming, 1980 Census, numbers and rates of groups of persons in Wyoming with 1979 income under poverty level.	No Charge

CRIS is a cooperative service provided by the Institute for Policy Research, University of Wyoming, and the Research and Statistics Division, Wyoming Department of Administration and Fiscal Control.

We are looking forward to assisting you in the future.

Judy Denison and G. Fred Doll
Institute for Policy Research
University of Wyoming

Phil Kiner
Research and Statistics Division
Department of Administration and
Fiscal Control

Wyoming Quarterly Update

Wyoming Quarterly Update (WQU) represents the efforts of the Institute for Policy Research (IPR) at the University of Wyoming to provide improved data access services. The data presented in WQU are assembled from secondary sources, such as government agencies and private industry. The staff of IPR greatly appreciates the ongoing, cheerful cooperation of each of the data sources listed in the bibliography.

WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously. Featured for the sixth time in this edition is an industry profile. In this edition, a discussion of Wyoming's basic sectors is presented.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting August 1985 county unemployment rates.

First-time readers of WQU should refer to the "format" explanations on page 50 for keys on how best to use and interpret data presented in this publication.

For additional information, contact WQU editor S.T. Mast at:

The Institute for Policy Research
University Station, Box 3925
Laramie, WY 82071
(307) 766-5141

OTHER IPR SERVICES AND RESEARCH REPORTS ARE LISTED AT THE END OF THIS WQU.

INSTITUTE FOR POLICY RESEARCH
OFFICE OF RESEARCH AND GRADUATE STUDIES
UNIVERSITY OF WYOMING

FRONT MATTER
Introduction....i
Table of Contents....ii

WYOMING SCENE
Overview and Perspective....2
Minerals Outlook....4
Agricultural Outlook....11
Job Openings Outlook....12
Coincident Indicators Index....13

INDUSTRY PROFILE
Basic Sectors....16
Park and Fremont....25
Interview....30
Covered Employment....32

ECONOMIC CHANGES
Discussion....36

WYOMING DATA
Agriculture....38
Banking and Finance....39
Business Conditions....40
Construction....41
Consumers....42
Employment and Labor....43
Energy and Mineral Production....44
Government....45
Tourism....46
Utilities....47
Wyoming Cost of Living Index....48
Rent by City....49
Format Description....50
Publications List....IB
CRIS Information....IF

Editor....S.T. Mast
Editorial Advisors....G. Fred Doll
Scott E. Atkinson
Word Processing....Tracy Cox
Editorial Assistance....Claoma Woodall
Business Coordinator....Patsy Parrott
Research Aide....Ruth Tebbutt
Graphics.... Cathy Ryan
UW Graphic Arts Services
Computer Graphics Package

Wyoming Quarterly Update is published four times per year in fall, winter, spring, and summer editions.

The articles appearing in this publication represent the opinions of the authors and do not necessarily reflect the views of the state of Wyoming or the University of Wyoming or their respective executive officers. Duplication or quotation of material in this publication is welcomed, but it is requested that WQU, the Institute of Policy Research, University of Wyoming, be credited.

WYOMING SCENE

Overview and Perspective

Despite a lagging industrial sector, the national economy showed signs of improvement during the third quarter.

Consumer spending increased 1.2 percent in August, the largest increase posted since April. About 70 percent of the rise was reflected in auto sales, which responded to Detroit's push to reduce 1985 inventories by offering attractively low financing. In September, domestic auto manufacturers sold 200,000 more autos than they built and auto inventories fell to 1.2 million. Overall, domestic auto sales increased 7.7 percent in September.

The late summer surge in retail sales, however, involved more than autos. Retail sales increased 2.7 percent in September, to a seasonally adjusted total of $120.2 billion. Retail sales other than autos increased 0.6 percent in September, following a 1 percent increase in August. Sales of hardgoods other than autos jumped 0.6 percent in September, after posting increases of 1.4 percent in both July and August. Despite a 2 percent drop in department-store sales, softgoods sales also increased in September. Sales of furniture and appliances climbed for a second consecutive month in September, while purchases of building materials and hardware picked up for a third consecutive month.

Industrial production, which has been in the doldrums, provided some lift to the economy during the period. Factory output rose at an annual rate of 2.6 percent, compared to 1.9 percent in the second quarter and virtually no growth in the first quarter. In August, orders of durable goods rose 3.4 percent, to $107.9 billion.

Inflation also remained low. During the first four months of the year, the consumer price index climbed at an annual rate of 4.3 percent. During the next four months the rate slowed even further, to an annual rate of 2.5 percent. In August, gasoline and used cars pushed transportation prices down 0.4 percent, the fourth consecutive decrease. Housing was the only category to show a modest increase, rising 0.5 percent in August to an annualized rate of 4.8 percent for the preceding six months.

Producer prices also showed declines in the third quarter. In September, the producer price index for finished goods dropped 0.6 percent, the sharpest such decline in three years. The major contributors to the decline were autos and food. Cut rate financing offered by automakers accounted for about one-third of the total decline in producer prices.

Growth in employment, although stymied somewhat by factory employment, continued during the third quarter. In the pattern of recent months, growth in services employment led the way. Nonfarm industries added 128,000 jobs in September, bringing total employment to an annual rate of 98.1 million jobs on a seasonally adjusted basis. However, the September gain was less than half the 280,000 increase posted in August and well below the average monthly gain of 237,000 registered during the first eight months of the year.

Factory employment continued to be a trouble spot. After posting its first increase of the year in August, factory employment dropped again in September. Factory jobs fell by 111,000 in September, after rising a modest 26,000 in August. Since the end of 1984, the

factory sector has lost 337,000 jobs, while nonmanufacturing sectors have added 2.4 million jobs. Import competition continued to be a major problem for hardgoods industries, and it appeared that Congress and President Reagan were headed for a showdown on import restrictions.

Services, on the other hand, continued to impress. Services-producing industries added 205,000 jobs in September. Since the beginning of the year, services have added some 2.1 million jobs to the economy.

On the political scene, Congress continued to grapple with the monstrous federal budget deficit. A proposal by Senators Phil Gramm (R-Tex.) and Warren Rudman (R-N.H.) (passed by the U.S. Senate in October) to reduce the budget deficit to zero between fiscal year 1987 and 1991 gained considerable notoriety. The proposal required the president to offer budgets that would reduce the deficit in equal steps. If Congress failed to meet the deficit-reduction objectives, the president would propose across-the-board cuts, with only Social Security spared the ax. If Congress failed to act on the president's proposal, the proposal would become law. Proponents of the measure argued that Gramm-Rudman would put into place a procedure for reducing the deficit. Critics, however, countered that the proposal was a fancy way by which Congress could avoid its responsibility to come to grips with the issue directly. It was viewed by some as an exasperated attempt to come to grips with a $200-billion deficit, despite four years of painful cuts already.

In Wyoming, the Bureau of Economic Analysis, U.S. Department of Commerce, reported that nonfarm personal income increased 3.1 percent during the second quarter, ranking Wyoming first among all states for the period. The rise was led by a dramatic 16.6 percent increase in wage and salary disbursements in the construction sector. In addition, government rose by 5.7 percent, manufacturing by 4.2 percent, and mining by 0.8 percent over the period.

A preliminary report released by the state auditor's office indicated that while more funds were deposited in the state's General Fund during the latest fiscal year, more funds were also spent. Following a dismal performance in fiscal year 1984, revenues in the fund rebounded in fiscal year 1985. Collections reached $396,530,353, an increase of more than $33 million over fiscal year 1984. At the same time, however, expenditures rose sharply to a total of $442,352,799, an increase of 24 percent. The cash balance in the General Fund dropped to $138,930,545.

A sour note during the third quarter was Wyoming's August unemployment rate, which rose to 6 percent. It was the second highest August rate since 1960, according to the Wyoming Employment Security Commission. Over the past 25 years, the August rate has averaged 3.7 percent.

Nineteen counties recorded higher unemployment rates in August 1985 than in August 1984. Only three counties, Goshen, Sheridan, and Sublette, recorded drops over the period, while Sweetwater County's rate remained the same. The highest unemployment rate was registered in Fremont County (9.8 percent), while the lowest rate was in Teton County (2.9 percent).

S.T. Mast, IPR

\# \#

Fall Minerals Outlook

OVERVIEW

With nine months of the year over, the mineral picture for Wyoming has changed slightly from last quarter. The price of oil has held up better than many persons predicted and will probably be little more than $1.00 below last year's price. Oil production in 1985, however, is unlikely to match last year's production as production declines in the larger, older fields outpace production gains from new discoveries and smaller fields. The decline in state production was expected, but it had been hoped that it would not start until 1986; drilling activity is noticeably down as well.

Construction of Phase I of Exxon's huge Shute Creek gas processing plant is well underway, boosting the economy of southwestern Wyoming. Phase II of the plans, though still not certain, has moved a step or two closer to fruition. In addition, the huge carbon dioxide and methane reserves of the Riley Ridge Field are now complemented by federal approval for Exxon to market helium reserves which will be produced with the other gases. Couple this with a growing demand for sulfur derived from associated hydrogen sulfide gas in the field, and the added value of the by-products is obvious.

Marathon's North Fork well between Cody and Yellowstone National Park proved to be a dry hole. Its drilling, however, not only demonstrated the viability of helicopter mobilization in the state, but geologic data gleaned from the well will provide much needed information in this relatively unexplored portion of the state. Potentially oil-bearing rocks in the area are covered by a thick veneer of volcanic rocks.

Coal production is considerably above earlier predictions and may well reach or exceed 143 million tons--a 9.5 percent increase over the record 130.7 million tons mined in 1984. Coal prices are apparently still falling and are likely to be 18-20 cents below 1984 as inexpensive spot sale prices lower the average price per ton.

The Wyoming coal industry continues to look at processes to upgrade the heat value of its delivered product, which if successfully implemented, could help offset a myriad of negative factors facing its marketability in the future. At the same time, however, the largest coal mine in Sheridan County announced it may close around 1988 for lack of markets.

A new wrinkle in coal contract activity has also appeared. A utility subsidiary responsible for coal purchases is reportedly about to declare bankruptcy. Should this occur, existing coal contracts that total an estimated 10 million tons could be in jeopardy. Even more important, similar actions by other purchasing subsidiaries could affect an even greater number of contracts. Although contracts voided by such actions would likely be renegotiated with Wyoming coal producers, the contract prices could be substantially below the existing contracts, thus reducing the value as well as the taxes and royalties derived from future

Table 1: Wyoming Mineral Production Forecast to 1991[1].

Calendar Year	Oil Production[2]	Natural Gas Production[3]	Coal Production[4]	Trona Production[4]	Uranium Production[4]
*1981	122.1	455.4	102.8	11.8	4.6
*1982	118.7	465.1	107.9	10.1	2.1
*1983	120.9	539.7	112.2	10.5	3.0
*1984	127.8	600.1	130.7	11.0	1.6
1985	125.0	630.0	143.0	11.3	0.9
1986	124.0	675.0	148.0	11.4	0.3
1987	122.0	715.0	149.5	11.5	0.3
1988	120.0	800.0	151.5	11.6	0.3
1989	118.0	825.0	152.0	11.7	0.3
1990	116.0	875.0	152.0	11.8	0.3
1991	114.0	925.0	152.0	12.1	0.3

*Actual values for comparison, [1] Geological Survey of Wyoming, September, 1985, [2] in millions of barrels, [3] in billions of cubic feet, [4] in millions of tons.

production.

Another uranium mine is slated to close by the end of the year, leaving only two active mines. Production forecasts for uranium production, already dismally low, now reflect even less production in 1986.

The land exchange between the U.S. Bureau of Land Management (BLM) and the U.S. Forest Service is undergoing many changes, but still remains a possibility. In particular, a plan to turn the Bighorn National Forest over to BLM is no longer as likely to happen.

Congress is still arguing over revisions in the federal oil and gas leasing procedures. A wholly competitive system now seems less likely, and Governor Herschler's three-tiered procedure continues to find favor, although many believe it is too complicated for BLM to manage.

In regard to coal, a new Reagan administration plan, which seeks to make companies pay the regulatory costs of implementing the U.S. Office of Surface Mining's reclamation activities, also recently surfaced. It has met with considerable opposition from industry as well as the state.

Gary B. Glass, State Geologist,
Geological Survey of Wyoming

COAL UPDATE

The latest coal production forecasts for the state indicate that 1985 production will be at least 143 million tons; production by 1988 will be about 151.5 million tons. Campbell and Converse counties will account for the major production increases. Sheridan and Carbon counties are expected to show production decreases through the remainder of the 1980s, and unless new markets develop for the mines in these counties, coal production will either decrease to less than 1 million tons a year or cease entirely by the mid-1990s. Sweetwater County is expected to experience a slow, steady growth into the next century, while Lincoln and Hot Springs counties will probably maintain current production levels.

Coal prices will probably remain low for the next few years because of the large amount of overcapacity at most Powder River Basin mines, and the high degree of competition that will exist for a limited number of new coal contracts. The overcapacity will be accentuated as additional coal mines in southern Campbell County and northern Converse County begin production in the next few years. Unless large, new contract tonnages are added (or coal contracts are taken from neighboring states) in the next few years, Powder River Basin growth will begin to level off. By 1992, additional coal will be needed to meet new demands for coal-fired generating units, and hopefully, many of these new coal supply contracts will be signed with Wyoming mines.

Estimates of the amount of future coal-fired, electrical-generating capacity needed in the middle to late 1990s, as well as the annual growth rate in electric power demand, are currently being revised upward over projections

Table 2: Coal Production and Forecast to 1991 (millions of tons).

	1981[1]	1982[1]	1983[1]	1984[1]	1985	1986	1987	1988	1989	1990	1991
Campbell County	71.6	81.2	88.2	106.8	118.7	122.9	124.4	125.9	127.8	126.6	127.4
Converse County	3.6	3.4	2.7	3.3	3.3	5.0	5.4	6.3	6.3	8.7	8.7
Sheridan County	2.8	3.0	2.9	2.5	2.9	2.0	2.0	1.5	-	-	-
Carbon County	8.5	5.0	4.8	5.1	3.2	2.9	2.4	2.0	1.6	1.1	0.3
Sweetwater County	11.2	11.0	9.5	8.9	11.0	10.7	10.5	10.8	11.2	10.5	10.5
Lincoln County	5.0	4.3	4.0	4.1	3.9	4.5	4.8	5.0	5.1	5.1	5.1
Hot Springs County	M[2]	M	M	M	M	M	M	M	M	M	M
Total Wyoming	102.8	107.9	112.2	130.7	143.0	148.0	149.5	151.5	152.0	152.0	152.0
Annual change	9%	5%	4%	16.5%	9%	4%	1%	1%	<1%	0%	0%
Estimated contracted production	110.0	119.0	122.6	137.7	145.2	149.2	149.4	151.5	148.6	150.6	151.0
Below contract	7%	9%	8%	5%	2%	1%	0%	0%	-	-	-

[1] These are actual values for comparison. [2]M means minor tonnage (less than 0.1 million tons). Forecast by Wyoming Geological Survey, September, 1985.

made in the period 1982-1984. These earl'er projections, made during times of very low or even negative growth rates in electricity demand, were influenced by several factors, including the downturn of the economy, an increase in conservation and efficiency of energy usage, an excess electrical-generating capacity, and perhaps an unrealistic view of the part that new technologies and alternative energy sources might play in solving future energy needs. During the period 1982-1984, excessive generating capacity (brought about by the start-up of power plants completed in the late 1970s and early 1980s--which were planned during times when growth rates were three times today's rates) plagued the electric utility industry and caused the cancellation and postponement of nearly 90 (or more than half) of the new coal-fired units planned for the late 1980s and early 1990s (McGraw-Hill, 1985).

Although excess generating capacity still exists today, this may only be a relatively short-term phenomenon. A rapid upturn in the economy in the last two years has brought about an increase in electric power demand that now exceeds 3 percent annually (compared to an average annual increase of 9 percent for the years 1900 to 1980) (Energy Information Administration, 1985). Much of this new demand will be taken up by the start-up of new nuclear-powered generating plants in the next few years; coal-fired plants will take up an estimated 35 percent of this new demand (McGraw-Hill, 1985).

Most market analysts for the coal and utility industries are now convinced that new coal-fired generating capacity will be needed to meet the demand by the mid-1990s. An estimate of future electrical demand by Data Resources Inc. (DRI) concluded that between 1988 and 2005, 34,692 megawatts of power will come from new coal-fired units, but more than three times this amount, or 115,232 megawatts, will be needed over this same period of time (McGraw-Hill, 1985). Other analysts are also predicting that by the early and middle 1990s, electric power shortages may occur in many parts of the United States. Clearly, the planning and construction of new coal-fired power plants, which often takes from five to 15 years to complete, must begin now if projected power demands in the 1990s are to be met. Because almost 98 percent of Wyoming's coal is used to fuel steam-electric generating plants, the state's coal production is more likely to increase than decline after the mid-1990s.

Factors that may affect the state's coal industry in the future include foreign competition, transportation costs, changes in both state and federal coal royalty and mineral tax structures, resumption of federal coal leasing, congressional action (or inaction) on coal-related regulations, state and federal regulations on nitrogen and sulfur emissions from power plants as acid rain control measures, possible breakthroughs in coal burning and electricity generation technology that will allow greater flexibility in choice of coal types (e.g. high sulfur vs. low sulfur coal), the influence of world oil prices on the choice of fuels for electricity generation and industrial applications, and possible breakthroughs in coal beneficiation prior to shipping.

In this latter case, Powder River Basin coal companies continued to experiment with ways to upgrade their low-Btu, low-sulfur coal to make it even more competitive in the market place. By reducing the moisture content of the coal from about 30 percent as-mined to about 10 percent as-shipped, the heat value of the coal can be upgraded from an average of 8,400 Btu/pound to about 10,500 Btu/pound. Most companies have examined processes ranging from simple solar drying to the high pressure-high temperature Koppelman process ("K-fuel"). Anaconda Minerals Company (a division of Arco) has developed a process using fluid-bed drying, fluid-bed cooling, and an unspecified proprietary treatment to reduce the dried coal's reactivity. Its process is very promising, but has yet to be tested on a commercial scale or on the marketplace. Fort Union Coal Company, in conjunction with Energy Brothers, Inc. and SRI International, is experimenting with a small commercial-scale unit that uses the patented Koppelman process to produce a high-Btu coal fuel pellet, "K-fuel". Evidently, Wisconsin Power and Light has purchased the first two years' output from this plant. Most recently, Mobil Coal Producing, in cooperation with ENI Engineering of Monroeville, Pennsylvania, completed testing of a pilot coal-drying unit at the Caballo Rojo Mine south of Gillette. This process reportedly produces a 10,500 Btu/pound low-sulfur coal. ENI apparently has several other coal companies interested in the project. Mobil is conducting cost and marketing studies on the process to determine the feasibility of commercial operation.

Statistics on the distribution and utilization of Wyoming's 1984 coal production (McNair, 1985) indicate that Wyoming coal was used in 23 states. As in 1983, Texas was the largest consumer of the state's coal with 25.6 million tons, followed by Wyoming with 19.1 million tons. These two states, plus Oklahoma and Kansas, used over half the coal produced in Wyoming; 80 percent of the state's production went to only seven different states. Nearly 98 percent of the state's total production in 1984 was used by electric utility companies for power generation and about 85 percent of the state's production was shipped out-of-state. About 1.8 million tons of the 2.8 million tons in "other industrial" and "residential/commercial" categories went to Wyoming users. Most of this coal was used by the state's trona, bentonite, and cement industries. Additional coal was used by sugar beet processing plants and by FMC Corporation's formcoke plant in Lincoln County. FMC's plant converts noncoking coal to formcoke through the company's patented process. About 200,000 tons of coal consumed in Wyoming in 1984 came from Utah, Montana, Colorado, and Pennsylvania.

Over 93 percent of the state's coal production was shipped by rail in 1984, compared to 90 percent in 1983. Burlington Northern Railroad (BN) accounted for about 85 percent of the total rail transportation, followed by Union Pacific (UP) with 10 percent. The Chicago and North Western/Union Pacific (C&NW/UP) joint venture railroad, along with Pacific Power and Light Company's (PP&L's) private rail line at Glenrock, accounted for the remaining 5 percent

of the rail tonnage.

In other news involving coal transportation, the C&NW/UP joint venture railroad recently announced the signing of three more coal haulage contracts. The first contract, announced in July, was with Kansas Power and Light for shipment of 1.0 and 1.3 million tons of coal per year from Amax Coal Company's Belle Ayr Mine to power plants at Lawrence and Topeka, Kansas. Shipments are due to begin in 1987 and will originate on the C&NW/UP joint venture's new 10-mile-long northern extension rail line. The second contract calls for shipment of 1.2 million tons of coal per year from a yet-unnamed Powder River Basin mine to Wisconsin Power and Light's Columbia Unit 2 Power Plant at Portage, Wisconsin. The third contract calls for shipment of 0.8 million tons of coal per year from Thunder Basin Coal Company's Coal Creek Mine to Wisconsin Power and Light's Edgewater Power Plant at Sheboygan, Wisconsin. With the signing of these three coal transportation contracts, the joint venture railroad now has nine signed contracts for the transportation of a total of 20 million tons of coal.

Big Horn Coal Company, a subsidiary of Peter Kiewit, Sons, announced in July that its coal mine northeast of Sheridan could close in 1988 when its contract with Commonwealth Edison expires. The mine has been operating since 1943. This mine produced 2.5 million tons of coal in 1984, employed about 230 workers (with 20 employees laid off at the end of August), and provided about 46 percent of Sheridan County's assessed valuation. Although the heat value of the coal at the Big Horn Mine is much better than that in the "Gillette strip" in Campbell County, the coal beds are thinner, under more overburden, and are more expensive to mine. The Big Horn Mine is evidently experiencing the same situation that most of the coal mines in the Hanna Basin face: it cannot compete with the large, efficient, highly productive eastern Powder River Basin mines.

Three additional coal supply contracts have been signed with Wyoming coal mines. Carter Mining Company (Exxon Coal) was recently awarded a contract for 430,000 tons of coal from its Rawhide Mine to Grand River Dam Authority's GRDA No. 1 generating plant at Chouteau, Oklahoma. Deliveries are slated from September to December, 1985. The Grand River Dam Authority also awarded Nerco a contract for 70,000 tons of coal from the newly constructed Antelope Mine in Converse County. This coal could be the first production shipment from the Antelope Mine. An extension of Carter Mining Company's spot contract with the Lower Colorado River Authority and the City of Austin, Texas, was recently signed. It calls for delivery of 200,000 tons of coal from the Caballo Mine to the Fayette Power Project between September and December of this year.

Amax Coal Company announced in early September that 11 salaried positions at its Wyoming coal mining operations were being terminated as part of the company's plan to trim 12 percent, or 1,500 people, from its national workforce by the end of the year. Five people from Amax's Western Division office in Gillette, two at the Belle Ayr Mine, and four at the Eagle Butte Mine were terminated, reducing the number of Amax employees in Campbell County to 706. The two mines will probably not be reducing their coal production, however. Earlier this summer, Amax announced that production from its two mines had passed 200 million tons. The Belle Ayr Mine has produced 140.7 million tons since it opened in 1972, and the Eagle Butte Mine has produced 59.3 million tons since it opened in 1978. In July, Thunder Basin Coal Company's Black Thunder Mine also shipped its 100 millionth ton of coal after only 7.5 years of operation.

News concerning federal coal leasing was quite varied during the last three months. The U.S. Bureau of Land Management (BLM) recently rejected an application for a federal coal exchange with Whitney Benefits on the grounds that the coal offered in exchange had a negative value and could not be mined at a profit under the proposed mining plan. Whitney Benefits, a charitable organization in Sheridan, Wyoming, had leased over 200 million tons of privately owned coal under lands along the Tongue River to Peter Kiewit, Sons, for possible mine development, but the Wyoming Department of Environmental Quality determined that the coal lands were under an alluvial valley floor (AVF) and were unsuitable for mining. Under federal regulations, this private coal was eligible for exchange with federal coal of equal value elsewhere. Whitney Benefits has appealed the decision in court, claiming that it should be given federal coal of equal negative value.

A federal coal lease sale for 2,973 acres of land containing about 13 million tons of recoverable coal in the Hanna Basin was held on July 8, 1985. Medicine Bow Coal Company, the sole bidder on the tract, bid $185.57/acre, or $551,706.34, for the parcel, but the BLM rejected the bid on the grounds that the bid did not meet the fair market value established by the government for the lease. Arch Mineral Corporation, the controlling owner of Medicine Bow Coal Company, had previously filed an application for an emergency lease on these lands. The Medicine Bow Mine, which is adjacent to the federal tract, is currently idle because of the lack of coal contracts. Pursuant to a reoffering request by Medicine Bow Coal Company, this same acreage will be offered in a competitive lease sale set for October 16, 1985.

Meanwhile the lawsuit filed several years ago by environmental groups to halt the controversial 1982 Powder River Basin coal lease sale continues in Billings, Montana, as the U.S. District Court hears arguments on several issues. In May of this year, the sale of federal coal lease tracts located in the Montana portion of the Powder River Basin was declared void. Arguments now being addressed in the case may affect leases in the Wyoming portion of the basin.

Richard W. Jones, Coal Geologist, Geological Survey of Wyoming

OIL AND GAS UPDATE

Mid-year completion statistics have recently been released by Petroleum Information Corporation (Rocky Mountain Region Report, 8-12-85, p. 3-4). The data for Wyoming (through

June 28, 1985) are shown as follows:

	New Field Wildcats	Other Exploratory Wells	All Wells Drilled
Oil	14	12	259
Gas	2	3	22
Dry	187	33	304
Total	203	48	585
Footage	1,722,035	416,809	4,507,766

(Note: Completion is deemed to have occurred when (1) total depth has been reached, (2) final status has been determined, and (3) in the case of producing wells, a gauge or initial production rate is reported).

Total wells drilled are apparently behind the 1984 pace for the year. However, because second-half activity traditionally runs higher, the decline may not be as substantial as it now looks. Once again, oil completions are running far ahead of gas completions, reflecting the market situation.

High bids at the U.S. Bureau of Land Management's latest Wyoming lease sale (August 1985) totaled $2,854,821 for 146 tracts, comprising 56,906 acres. The average bid was $50.17 per acre.

High bids at the Wyoming Board of Land Commissioners' September lease sale totaled $989,069. Bids averaged $16.39 per acre for 126 parcels, totaling 60,356 acres.

In late July, Amoco announced that it would proceed with its proposed enhanced oil recovery project for Wertz and Lost Soldier fields north of Rawlins. The project will utilize carbon dioxide (CO_2) from Exxon's new gas processing plant east of Kemmerer. The company estimates an incremental recovery of 40 million barrels of oil, according to a recent Petroleum Information report (Rocky Mountain Region Report, 7-25-85, p. 1). The project will cost at least $250 million. Actual injection of carbon dioxide will begin in the Tensleep reservoir of Wertz Field in October of 1986. Three additional phases of carbon dioxide injection are expected to get underway in 1987 or later. According to Amoco, earlier waterflooding techniques have left 50-60 percent of the original oil in place in the two fields, and this CO_2 project could recover an additional 5-15 percent.

Nationally, seismic activity, which is often considered a leading indicator of petroleum exploration, increased over 10 percent from 1983 to 1984, according to a recent report based on data from the Society of Exploration Geophysicists (Rocky Mountain Region Report, 8-2-85, p. 7-10). During the same period, the cost of acquiring seismic data dropped a bit more than 5 percent. Onshore work in the United States remained virtually even with 1983 levels, while offshore activity increased almost 15 percent. In Wyoming, line-miles of seismic surveys totaled 12,239 in 1984, a 9.6 percent drop from 1983. An estimated $68,690,233 was spent for seismic surveys in Wyoming in 1984.

Exxon officials recently stated that hopes are fading for the company's planned initiation of construction on Phase II of their giant Shute Creek gas processing plant in the La Barge area. The $2.2-billion project will be the largest gas plant in the Rocky Mountain region and one of the biggest in the United States. There are currently 4,000-4,300 employees working on Phase I. Another 1,000 employees would be added if Phase II gets started. Permitting delays and the need to locate markets for processed products were cited as the causes for the potential delay. In mid-September, the Wyoming Department of Environmental Quality issued an air quality permit for the second phase of Exxon's plant.

In a related item, on June 7, 1985, the U.S. Department of Interior announced it had agreed to the sale of government-owned helium from Exxon's Riley Ridge Field in southwestern Wyoming.

Under the agreement, Exxon will extract the helium as part of its natural gas operations in the Riley Ridge Field, due to start in mid-1986, and sell the helium to private industry, paying a royalty to the government from the proceeds of the sale. The agreement is set to run for 20 years, producing approximately $60 million in federal royalties.

"This agreement provides a benefit for the government and for the private sector," said Robert C. Horton, director of the U.S. Bureau of Mines, who signed the agreement for the Interior Department. "It allows private industry access to Riley Ridge helium at a time when private helium resources are beginning to decline. It also makes use of natural resources without a costly government storage and conservation program."

The Riley Ridge Field, located just east of the Overthrust Belt in southwestern Wyoming, is estimated by the U.S. Bureau of Mines to hold more than 100 billion cubic feet (BCF) of helium in association with other natural gases. Some private estimates place the total helium content at more than 200 BCF. Exxon has leased tracts in the area from the government for oil and gas development, but under provisions of the Mineral Lands Leasing Act of 1920, the helium remains federal property. Currently, the government has adequate supplies of helium, and efforts to separate and store the gas for future use would involve an expensive conservation program.

Under the terms of the new agreement, the helium in the ground remains the property of the Federal Government, but Exxon assumes ownership when the gas enters the company's above-ground production facilities. The company will then sell the gas, paying the government a royalty of one-eighth the gross proceeds from the sale of crude helium, and one-twelfth the gross proceeds from sales of refined helium, including liquid helium. Exxon expects to produce about 800 million cubic feet of helium per year. Minimum royalties of $3.00 per thousand cubic feet (MCF) for crude helium, $3.12 per MCF for gaseous refined helium, and $3.33 per MCF for liquid helium are included in the agreement but are subject to adjustment.

At the completion of the 20-year agreement, the government will reevaluate its need for helium and the relative merits of sales or conservation.

Marathon Oil Company recently finished the drilling phase of its controversial North Fork well in the scenic valley between Cody and Yellowstone Park. Equipment for drilling the well was brought in by helicopter to minimize environmental damage. Nevertheless, the well was opposed by several local groups. The results of the test were negative, and the well was completed as a dry hole. The objective of the 5,262-feet-deep well was the Madison Limestone.

The most significant recent discovery was completed by Monsanto Oil in the Madden Deep Unit of central Wyoming. The 1-5 Bighorn well (SW, NW, Section 5, T.38N., R.90W.) flowed 5,322,000 cubic feet of gas per day from the Mississippian Madison Limestone at a depth of 23,902 feet to 23,958 feet, according to a report by Petroleum Information Corporation (Rocky Mountain Region Report, 8-23-85, p. 1). The Monsanto well is located on the large Madden structure, which covers more than three townships, implying a potentially huge reserve of gas. Many of the other Cretaceous and Tertiary producing traps along the Wind River Basin axis may now become targets for deep exploration.

In addition, Monsanto's well reached a total depth of 24,877 feet, not only making this the second deepest well in the Rocky Mountain region, but also giving it the distinction of being the deepest production well in the Rockies. Previously, a Colorado Interstate Gas well in the Bull Frog Unit to the east held that distinction. That well produced from Cretaceous/Jurassic rocks between 19,830 feet and 20,150 feet.

After technical presentations at a hearing in August, the Wyoming Oil and Gas Conservation Commission took the matter of pursuing enhanced oil recovery operations in the Dakota reservoir at Buck Draw Field in Campbell County under advisement until the commission's staff could review and evaluate all the technical reports and studies that have been done on the field. Oil companies in the field significantly disagree about whether a successful enhanced oil recovery project is possible in the field. Because of the voluminous evidence provided by the different companies, the commission's decision in this matter was postponed. In the meantime, previous production restrictions remain in force.

Alan J. VerPloeg, Petroleum Geologist
Geological Survey of Wyoming

METALS AND PRECIOUS STONES UPDATE

During the past quarter, there was exploration for auriferous (gold-bearing) iron-formation in the Bradley Peak area of the Seminoe Mountains District; exploration drilling for exhalative gold in the Hartville uplift; and exploration activities, including drilling, for shear zone and exhalative gold mineralization in the South Pass-Atlantic City and Lewiston mining districts. These areas are shown on a new map by Harris and others (1985). In addition, Anaconda Minerals Company announced that its Garrett stratiform gold deposit in the Garrett supracrustal complex of the northcentral Laramie Range was for sale. The Garrett property contains low-grade gold mineralization associated with arsenopyrite and berthierite ($FeSb_2S_4$).

A recent paper published in the Engineering and Mining Journal stimulated some interest for gold hosted by Permian through Tertiary paleoplacers in northwestern Wyoming. Phillips (1985) pointed out similarities in gold particle size, depositional environments, and the gross quantity of gold in the Wyoming deposits with the Witwatersrand deposits of South Africa. He estimated that the Wyoming paleoplacers might contain 3.55 billion ounces of gold. Some exploration groups announced that they will conduct some preliminary investigations in that region.

The Geological Survey of Wyoming continued stream sediment sampling to search for kimberlite in the Laramie Range. At the beginning of July, the Geological Survey of Wyoming began sampling north of Sybille Canyon along the southern edge of the Elmers Rock greenstone belt. An overview of the kimberlite exploration project has been published (Hausel and others, 1985).

According to an August press release, the U.S. Bureau of Land Management's (BLM) Denver Service Center began mailing to all mining claimants of record the "Mining Claim Annual Assessment Reminder." (Bureau Form 3830-2). The form will enable BLM to use an automated system to speed up the processing of "affidavits of assessment work" and "notices of intent to hold" for mining claims, mill sites, and tunnel sites.

Anyone having a mining claim on federal lands in Wyoming must file annual documents to maintain those claims. Holders of the mining claims are required to provide either evidence of annual assessment work performed during the preceding year or a notice of intention to hold the mining claim. BLM uses the notices to determine which claims have been abandoned and which are still active.

For each claim located before September 1, 1984, an "affidavit of annual assessment" must be filed showing that at least $100 worth of work was completed on the claim during the 12-month period ending at 12 p.m. on September 1, 1985. For claims located between September 1 and December 31, 1984, a "notice of intent to hold" a claim or an "affidavit of annual assessment" must be filed. Persons who located claims during 1985 do not have to file assessment notices until next year. The filing requirements apply to unpatented claims on all federally administered lands, including land administered by the U.S. Forest Service.

The use of the form is optional; however, by using it, mining claim records will be updated quickly in the BLM's computer system. The form enables BLM to provide each claimant with a listing of their mining claims and sites.

If the form is being used to file an "intent to hold," or an "assessment done," the claimant must also enclose a notice of "intent to hold" and(or) an "affidavit of assessment work". If the form is being used to notify BLM of an "abandonment," a signed statement must be enclosed stating that the claimant is abandoning the mining claim(s) and (or) site(s). If "affidavits of assessment work"

or "notices of intent to hold" are not enclosed, the BLM cannot process the form or use it to update records in the computer.

If the form is mailed, it must be postmarked by December 30, 1985 and received by the BLM on or before January 21, 1986. It is recommended that claimants use certified mail, return receipt requested, to insure that the BLM receives the form. If the form is hand-carried, BLM must receive it no later than December 30, 1985.

The BLM's Wyoming State Office is located at 2515 Warren Avenue, (P.O. Box 1828), Cheyenne, Wyoming 82003. For further information contact Donna Kailey at the U.S. Bureau of Land Management in Cheyenne [(307) 772-2290].

W. Dan Hausel, Deputy Director, Geological Survey of Wyoming

URANIUM AND INDUSTRIAL MINERALS UPDATA

Uranium

Wyoming's uranium industry continues to contract. Bear Creek Uranium, a joint venture of Rocky Mountain Energy and Mono Power Company, announced the pending closure of its uranium mine in the Powder River Basin. This action followed the early buy-out of its contract to supply fuel to Southern California Edison. The closure is to take place December 31, 1985. Only one uranium company, Pathfinder Mines, will remain in Wyoming. Pathfinder, whose parent company is COGEMA, a French consortium, operates two mines and mills in Wyoming, one in the Gas Hills and one in the Shirley Basin. In 1979, there were 17 uranium mining operations in Wyoming.

As a result of the announced mine closing, production estimates for uranium for the next five years have been revised (page 4). Production estimates reflect COGEMA's expected capacity.

During 1985, the spot market price of uranium has risen more than a dollar per pound of U_3O_8 (yellowcake) from $14.25 to $15.75. The price is still too low to support a mining operation and reflects sales of U_3O_8 from utility and other stockpiles.

Bentonite

The outlook for bentonite is one of stable production rates and relatively low prices. In contrast to the uranium industry, bentonite mining companies have not closed down operations despite the downturn in prices and production. Over the past year, some Wyoming bentonite has been sold as a soap filler and additive, replacing bentonite formerly imported from the eastern Mediterranean area.

Trona

The trona industry is moving to attract foreign consumers and to expand its export market. The industry sponsored a tour, including a train trip from San Francisco to the trona mines at Green River, Wyoming. The members of the tour were mostly foreign soda ash (refined trona) consumers. They were encouraged to purchase mined trona from Wyoming.

Otherwise, the trona market appears stable at slightly-below-peak production levels and low prices. Industry competition remains high as plants continue to operate below capacity.

Phosphate

Construction progresses on Chevron Chemical Company's phosphate processing plant at Rock Springs and the slurry pipeline from the phosphate mine north of Vernal, Utah. A controversy over fluoride emissions from the plant appears to have been settled at Chevron and the Wyoming Department of Environmental Quality agreed to new emissions standards. Because phosphate is produced from minerals that contain the element fluorine, fluorides are found in both phosphate products and plant waste.

Other Industrial Minerals

The consumption of construction aggregate reached high levels during the third quarter as construction and resurfacing of highways reached their seasonal peaks. Crushed limestone, granite, dolomite, and clinker (baked and fused rock) were used in many areas. Sorted natural gravel deposits were used where available.

The production of limestone for sugar rock continued to decline, as Holly Sugar Company's Lost Day Quarry near Fort Laramie was operated only intermittently.

Gypsum production is expected to increase slightly in 1985 and 1986 as the demand for wallboard increases. Two gypsum plants in the Bighorn Basin produced wallboard and other gypsum products. Gypsum mined near Laramie is used in cement.

Small-scale production of clay near Evanston and sodium sulfate near Natrona continued. Marble was quarried west of Wheatland by Basins Incorporated, and south of Lusk in the Rawhide Buttes area, by the Pacer Corporation of Rapid City, South Dakota.

Both the Burlington Northern, and Chicago and North Western railroads (C&NW) have been searching for ballast sources in Wyoming. Quartzite and granite in the Hartville uplift and Laramie Range areas have been tested. Granite from south of Lusk was used by C&NW. The Burlington Northern, however, imports its ballast from Wisconsin and Oklahoma, except for some bought from the Guernsey Stone Company (Peter Kiewit, Sons) at Guernsey.

Ray E. Harris, Uranium and Industrial Minerals Geologist, Geological Survey of Wyoming

# #

Fall Agricultural Outlook

Excessive supplies of agriculture products and resulting low prices continue to dominate the agricultural scene as we move into late fall. Falling land values, declining equities, and continued high real interest rates all point to another year of belt tightening in the agricultural sector.

Grains

American farmers are in the process of harvesting a record corn crop, estimated at 8.6 billion bushels by USDA officials. If this forecast materializes, it will be 12 percent above last year and will add to the massive surplus of feed grains in the U.S. The October forecast called for a record 115.1 bushels per acre, compared with the previous record of 113.2 bushels in 1982.

Total feed grain usage, including exports, is not expected to change from year-ago levels. Thus, the projected carry-over into the next marketing year will be in the neighborhood of 94 million metric tons, three times the carry-over supply of the 1983-1984 crop year. Corn prices will likely hover 15 cents to 30 cents per bushel below year-ago levels.

The nation's 1985 wheat harvest was estimated at 2.42 billion bushels, down 7 percent from last year's crop. Exports are expected to continue their decline into the coming year, however, and result in an increase in total supplies. With a projected 1.6 billion bushel carry-over, producers will be facing prices 15 cents to 35 cents per bushel below 1984-1985 prices.

A weaker dollar would increase exports above current projections for the coming year and put upward pressure on grain prices. However, the probability of this occurring in the next six months is low. Producers will again be postponing machinery and other capital purchase items. At the time of this writing, the shape of the new farm legislation moving through the U.S. Congress has become clear enough to suggest that it won't solve many of the basic problems in the American agricultural economy.

Livestock

Livestock prices took an unexpectedly sharp drop last spring and are only now beginning to show some signs of recovery. Price declines reflect a combination of events. The most important of these is that meat supplies have been large this summer. Per capita meat consumption could reach a record 212 pounds in 1985, with declines in pork and beef being more than offset by increases in poultry.

Meat supplies in the beef sector have increased primarily by heavier slaughter weights. Cattle feeders expected stronger prices last spring, but when they did not develop, cattle were kept on feed longer in hopes that the market would turn around. This added to the total supply of meat available and increased price discounts for highly finished cattle. Lower feed cost and good weather also pushed hog weights sharply higher.

Meat supplies were also augmented by selling off of breeding stock, heifers, and gilts originally intended as replacement animals. Many farmers, especially those in mixed crop-livestock farming areas, sold additional animals to provide extra cash for paying debts or to pay for crop production inputs.

The mid-year cattle inventory report indicated a 4 percent decline from a year earlier to 116.3 million head. Beef cows, at 35.3 million, were down 7 percent from a year earlier. Important in longer-term outlook, beef replacement heifers were down 11 percent. The 1985 calf crop was estimated at 41.1 million, a 3 percent decline from a year earlier, and the fifth consecutive year that the calf crop has declined. Cow slaughter, as a proportion of the herd, also remained high through the first half of 1985. This, combined with a low replacement rate and a smaller calf crop, could result in an inventory below 107 million head by January 1, 1986.

Continued reduction in beef supplies should push prices higher throughout the coming year. Feeder cattle prices should strengthen this winter and be equal to or above the levels reached last spring. The key to continued improvement in prices is tied to the strength of the overall U.S. and world economies.

Robert D. Carver
University of Wyoming

# #

Job Openings Outlook

Radiologic Technologists

Radiologic technologists operate x-ray equipment to aid in the diagnosis and therapy of various health problems. It is recommended that a person specialize within the field. Areas of possible specialization include radiation therapy, angiography, ultra-sound, computerized tomography, and research. Employers of radiologic technologists are hospitals, physicians, and other health care facilities.

Employers prefer registered technologists who have successfully completed a formal training program at a hospital or college. Federal regulations dealing with radiation procedures will be changing within the next two years, making registration of radiologic technologists a legal requirement. Licensing and registration requirements include completing an approved radiologic technology program and passing an exam. An examination fee, a licensing fee, and an annual renewal fee are required. Registration is available from the American Registry of Radiologic Technologists (AART). For more information contact either: The American Society of Radiologic Technologists, 15000 Central Avenue, S.E., Albuquerque, New Mexico 87123 or the American Registry of Radiologic Technologists, 2600 Wayzata Boulevard, Minneapolis, Minnesota 55405.

In Wyoming, there is a balance to slight shortage of qualified radiologic technologists. Outlook depends on replacement of those who leave the occupation, the increasing use of x-ray equipment to diagnose and treat diseases, technological advancements, expansion of existing medical facilities, and the number of new graduates entering the job market. Increased efforts to decrease the costs of health care, including the implementation of new regulations regarding some health insurance payments, may decrease the demand for diagnostic exams, therefore decreasing the number of technologists needed. However, increased use of new technical equipment will create a need for more advanced training and in turn create more jobs. In small communities, low turnover creates few openings. Opportunities are better in larger towns for those with advanced knowledge in a specialty area.

Starting wages for radiologic technologists are between $7.50-$8.75/hour depending on geographic location. Maximum wages range between $10.00-$11.00/hour.

Drafters

In Wyoming, about 610 people are employed as drafters. Drafters translate ideas and sketches of engineers, architects, and scientists into detailed drawings which are used in manufacturing and construction. They utilize various drafting tools, engineering practices, and math to complete drawings. Most drafters are employed by engineering and architectural firms, electronics firms, and government agencies.

Presently, there is a surplus of drafters in Wyoming. Outlook depends on expansion of those industries and agencies designing complex products and processes. Opportunities for beginners are very limited and competition is keen in towns where training is available locally. At this time, due to cutbacks in many industries, employment has declined. As the economy improves, employment opportunities will improve. For now, though, opportunities are best for those with experience. Also, employers say today's draftsperson needs a background in computer-aided drafting systems and scissors drafting to have an edge on the competition.

Colleges offer one-year certificates and two-year associates degrees in drafting. High school courses in drawing, drafting, and math provide good background.

Entry wages for drafters range from $875-$1,200/month. Maximum salaries are between $1,730-$2,580/month.

For further information, contact Tammy Argyle, Wyoming Career Information System, Box 3808, University Station, Laramie, WY 82071, (307) 766-6189. WCIS is a unit within Student Educational Opportunity, a Division of Student Affairs at the University of Wyoming.

Tammy Argyle, Wyoming
Career Information System

# #

Wyoming Coincident Indicators Index

The Wyoming economy continued to wallow about during second quarter 1985, taking no real positive or negative direction. The latest figures computed for the Wyoming Coincident Indicator Index (WCII) indicate that Wyoming's economic recovery is still on hold.

The WCII, computed by the Division of Research and Statistics, Department of Administration and Fiscal Control (DAFC) is derived using economic variables whose movements generally coincide with movements in the overall economy. It is a composite index which uses four economic variables: 1) Wyoming total sales and use tax collections in 1972 dollars; 2) Wyoming state total insured wages paid in 1972 dollars; 3) Wyoming state total employment; and 4) an industry index comprised of one economic variable from each of Wyoming's three major industries. The three industries are agriculture, mining, and tourism, and the respective variables are: 1) prices received by Wyoming farmers and ranchers for all commodities; 2) Wyoming drilling rig count; and 3) Wyoming motor fuel gallonage sales. The historical period over which the index is calculated is January 1972 to June 1985.

Presented on the accompanying graph are the plots for three time series: one for the index using seasonally adjusted data, one for the index using data which has not been seasonally adjusted, and one for the U.S. Coincident Indicator Index. The unadjusted index is presented to show the seasonality of the Wyoming economy. The U.S. index is shown in order that it might be compared to the Wyoming index. The more important Wyoming index, and the one with which all further analysis and description will be concerned, is the seasonally adjusted index. In this index, turns up and down are caused by factors other than seasonality. The base month is January 1972, which has an index value of 100. An index value doesn't have any meaning in and of itself but is valid only when compared to another value from the same index.

The seasonally adjusted index fell 1.92 index points, or 1.3 percent, over the quarter, while the unadjusted index rose 2.05 index points, or 1.7 percent. The U.S. coincident index rose 1.3 points, or .8 percent, over the same time period. While the increases in the unadjusted index are a positive sign, they are not strong enough to result in an increase in the seasonally adjusted index, which is a more important indicator of real growth in the economy.

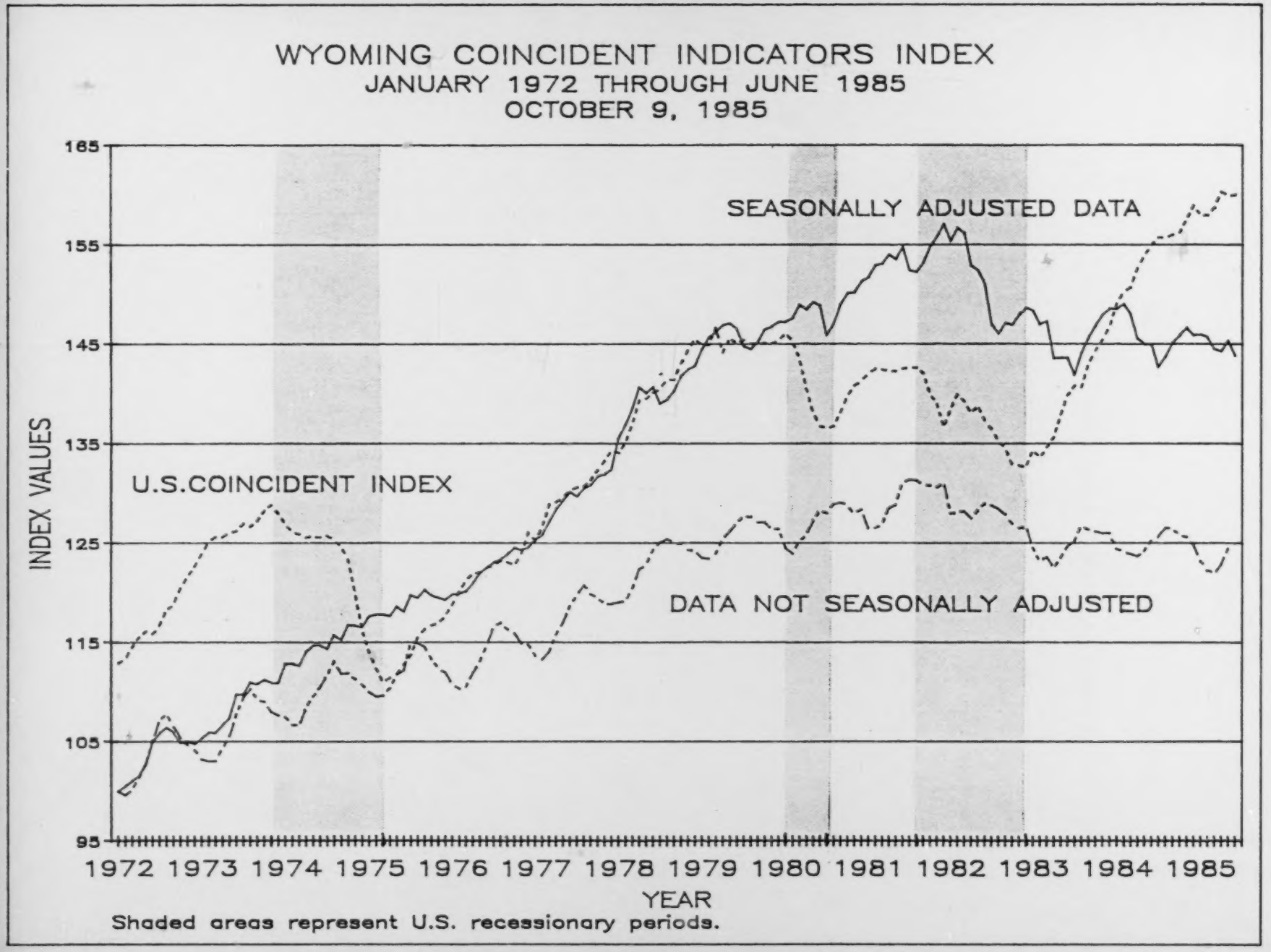
Employment, payrolls, and gasoline sales improved from first quarter 1985, while sales tax collections, rig count, and agricultural prices were down or unsteady.

Payrolls and gasoline sales were up from a year ago, while all the other variables were down or unsteady. The result was a slight drop in the seasonally adjusted index from first quarter 1985 and a slightly larger drop from second quarter 1984. Over the last twelve months, the index has only varied 4.05 index points, from a low of 142.64 in July 1984 to 146.69 in January 1985.

The movement of the unadjusted index over the last eight quarters is an indication that the Wyoming economy has at least returned to its normal seasonality. However, there has not been enough growth in the economy to reflect a definite upswing in the seasonally adjusted index. Hopefully, third quarter will provide some improvement in the Wyoming economy. Preliminary indications show that sales tax collections, rig count, and gasoline sales have been improving slightly over the last few months. This follows the seasonal economic pattern but probably will not be a strong enough improvement to show much positive gain in the seasonally adjusted index. This is an indication that the Wyoming economy is still sluggish and probably will be through the end of 1985.

Steve Sommers, DAFC

# #


WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1972 THROUGH JUNE 1985
OCTOBER 9, 1985
INDEX VALUES
165
155
145
135
125
115
105
95
SEASONALLY ADJUSTED DATA
U.S.COINCIDENT INDEX
DATA NOT SEASONALLY ADJUSTED
1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985
YEAR
Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

Basic Sectors

Making Wyoming Tick

INTRODUCTION

While all economic activity is important, some is fundamental. Some sectors shape the basic economic character of a state or region and provide the driving forces upon which derivative economic activities are predicated. In Wyoming, such basic sectors include agriculture, mining, travel, and construction.

The following article is intended to explore the basic sectors of the Wyoming economy. This is accomplished first by examining basic sector characteristics overall and then by focusing on particulars of each basic sector.

OVERVIEW

In general, basic sectors can be viewed as those sectors which produce goods or services for sale outside the state, or which otherwise bring money into the state. Accepted economic dogma suggests that these industries determine the direction of a state or a local economy. If a basic industry expands, increases in sales out-of-state will be responsible for increasing the availability of new money in the state, at least some of which will be spent and respent in the local economy. Conversely, when a basic sector declines, out-of-state sales decline, possibly resulting in lost labor income in the local economy. At the same time, declines can also mean contractions in derivative industries. When a mine closes, for instance, the effects ripple throughout the local economy, affecting small businesses and others dependent upon the mine payroll.

Unlike many states where output from the manufacturing sector makes up the bulk of basic sector activity, Wyoming's major basic sector activities are mining, agriculture, travel, and construction (especially heavy construction). Of the four, mining ranks as the most important in terms of income generated. The predominance of mining, however, is a relatively recent development, at least partially the result of escalating energy prices in the 1970s.

Wyoming's basic sectors tend to be seasonal and highly cyclical in nature. They also tend to be tied closely to national and international market conditions. A dramatic change in the world price of oil, for example, will assuredly affect the level of activity in the state's oil industry.

On a regional level, other activities in Wyoming might be considered basic industries. In Laramie, the University of Wyoming could be considered a basic industry. A regional medical center might also be considered a basic activity for a county, based upon the new money it is able to attract from adjoining counties and even other states.

AGRICULTURE

Agriculture was one of the first basic industries to develop in the state. Serious, nontransitory agriculture began during the period of the Civil War when a few Mormon families established a small colony along Wyoming's present border with Utah. Thus began a long period in which the capacity of the land to sustain crops and livestock was tested. At first, it was difficult to dispel the myth that Wyoming was a useless desert in which crops could not be grown and in which domestic livestock would die of exposure each winter.

In the early years, agricultural problems were attacked in the most pragmatic ways possible. In 1891, the establishment of the Agricultural Experiment Station at Laramie, along with associated farms in several locations, helped provide tangible proof that agriculture did have a future in the state.

Livestock became the mainstay of state agriculture. From 1870 to 1965, the value of livestock and livestock products accounted for 78 percent of all agriculture commodities sold in Wyoming. The number of farm and ranch units increased steadily until the Great Depression, but declined by nearly half to 8,838 in 1969. Except for such periods as the 1930s, total farm income in Wyoming generally increased, from $11.9 million in 1900 to $269 million in 1969. U.S. Government programs provided an increasingly large portion of the cash receipts after 1930. In recent years, however, farm income has declined drastically. In 1982, total farm income for the state amounted to less than 40 percent of the farm income reported in 1969, according to Bureau of Economic Analysis (BEA) data.

The cycical nature of agriculture can be demonstrated by tracking cattle numbers throughout much of this century. The number of cattle rose from 36,472 in 1870 to 746,664 in

Table 3: Agriculture as a Basic Sector in Wyoming Counties.*

# Farm Proprietors (1982)	Wage & Salary Employment (1983)	% County Personal Income Related to Farm (1983)	Composite Rank
1) Goshen (899)	Park (436)	Washakie (6.6)	Park
2) Fremont (793)	Goshen (398)	Niobrara (5.5)	Goshen
3) Park (642)	Laramie (359)	Johnson (5.4)	Fremont
4) Laramie (627)	Sheridan (355)	Sublette (5.0)	Sheridan
5) Big Horn (608)	Carbon (353)	Weston (2.9)	Laramie
6) Lincoln (600)	Big Horn (347)	Carbon (2.6)	Lincoln
7) Sheridan (518)	Fremont (336)	Converse (2.4)	Carbon
8) Platte (516)	Natrona (302)	Hot Springs (2.4)	Niobrara
9) Crook (511)	Platte (284)	Sheridan (1.5)	Converse
10) Campbell (470)	Lincoln (268)	Lincoln (1.3)	Washakie
11) Niobrara (324)	Converse (262)	Fremont (1.0)	Johnson
12) Converse (294)	Washakie (247)	Park (1.0)	Big Horn
13) Uinta (290)	Sublette (246)	Campbell (1.0)	Sublette
14) Johnson (274)	Niobrara (216)	Goshen (.8)	Platte
15) Weston (268)	Campbell (211)	Teton (.7)	Campbell
16) Carbon (238)	Johnson (185)	Laramie (.1)	Weston
17) Washakie (237)	Crook (180)	Natrona (.04)	Natrona
18) Albany (231)	Albany (161)	Albany (-.1)	Crook
19) Natrona (221)	Sweetwater (118)	Sweetwater (-.2)	Hot Springs
20) Sublette (200)	Weston (116)	Uinta (-.5)	Uinta
21) Sweetwater (120)	Uinta (108)	Platte (-1.0)	Albany
22) Hot Springs (113)	Hot Springs (105)	Crook (-1.1)	Sweetwater
23) Teton (107)	Teton (93)	Big Horn (-2.7)	Teton

*Based on Bureau of Economic Analysis (BEA) data.

Table 4: Mining as a Basic Sector in Wyoming Counties

Wage & Salary Employment (1983)	% Personal Income Related to Mining (1983)	Composite Rank
1) Sweetwater (5962)	Campbell (47.9)	Sweetwater
2) Natrona (5477)	Sweetwater (39.3)	Campbell
3) Campbell (5199)	Uinta (26.2)	Uinta
4) Fremont (1991)	Carbon (23.5)	Carbon
5) Uinta (1861)	Lincoln (22.8)	Natrona
6) Carbon (1507)	Converse (21.8)	Fremont
7) Converse (1052)	Weston (19.5)	Converse
8) Park (1014)	Fremont (16.3)	Lincoln
9) Lincoln (890)	Natrona (15.4)	Weston
10) Weston (719)	Hot Springs (15.0)	Park
11) Sheridan (471)	Sublette (12.3)	Hot Springs
12) Big Horn (393)	Park (11.4)	Big Horn
13) Hot Springs (323)	Crook (11.1)	Crook
14) Johnson (297)	Washakie (7.9)	Sheridan
15) Crook (296)	Big Horn (7.6)	Sublette
16) Washakie (283)	Johnson (7.6)	Johnson
17) Laramie (229)	Niobrara (4.9)	Washakie
18) Sublette (228)	Sheridan (4.6)	Laramie
19) Niobrara (56)	Laramie (.7)	Niobrara
20) Platte (45)	Albany (.1)	Albany
21) Albany (19)	Platte (.0)	Platte
22) Goshen (0)	Goshen (.0)	Goshen
23) Teton (0)	Teton (.0)	Teton

*Based on Bureau of Economic Analysis (BEA) data.

1900, as the industry first emerged in the state. This was followed by a period of sharp declines, only to rise to an estimated 609,000 head in 1912. Numbers then rose rapidly to 1,301,000 in 1919. By the end of 1919, however, numbers were down once again due to a drop in prices following World War I. Cattle numbers continued downward until 1928. In 1929 an upward trend began, peaking at 1,050,000 head in 1934. However, widespread drought in 1934 forced numbers back. In 1937, a new upward trend began. Periodic droughts caused fluctuations in the cattle cycle during the 1950s and 1960s. Steady growth occurred from 1962 to 1975, however, with cattle numbers reaching 1,690,000 by January 1, 1975. On January 1, 1985, there were 1,365,000 cattle on Wyoming farms and ranches.

Except for hay, farm crops production did not become an important factor until about 1915. The first grain crop to reach an annual production of 1 million bushels was oats. By the late 1920s, however, other crops were rising to positions of greater importance in Wyoming agriculture, as wheat became the number one crop in terms of both production and value. The leading areas for such dryland farming were in southeastern Wyoming.

Just prior to World War I, sugar-beet growing was imported from Colorado. Both beans and sugar beets, with the aid of irrigation, were grown in such areas as Goshen Hole, the Bighorn Basin, and the Wind River Basin. Today, sugar beets remain a major cash crop in many parts of the state.

Cash receipts from agricultural output expanded during the decade of the 1970s. Cash receipts for all agricultural commodities increased by a factor of 2.85, from approximately $233 million in 1970 to $666 million in 1980. Cash receipts for meat animals accounted for 73.9 percent of the total in 1980, while cash receipts for crops accounted for 21.9 percent of the total. Sugar beets and hay were the most important cash crops.

Despite the fact that sheep production represented a small share of meat-animal cash receipts in 1980, Wyoming ranked third among the fifty states in sheep production. On January 1, 1984, there were 1,090,000 sheep and lambs on state farms and ranches.

Much of the increase reflected in higher cash receipts, however, can be attributed to inflation rather than higher production. In the case of all commodities, 81 percent of the growth in cash receipts resulted from price increases and only 19 percent resulted from increased production. In real terms, therefore, the agricultural sector in Wyoming expanded only at a modest rate during the decade of the 1970s. In addition, since production costs increased substantially during the decade, real income generated by the sector fell. To keep pace with inflation, the 1970 agricultural income of $78.8 million would have had to grow to $165.9 million in 1980. However, income actually increased to only $111.5 million, down from $129.4 million in 1979.

Nevertheless, according to some reckonings, agriculture placed second to mining in terms of its impact on the total economy during the decade of the 1970s. Agricultural marketings plus government payments varied from $248.4 million to $527.2 million, with generally higher figures during the later years of the decade.

An Institute for Policy Research analysis of agriculture based on currently available Bureau of Economic Analysis data indicated that during 1982-1983 Park County might be considered the state's overall agricultural leader, based on employment and income statistics (table 3). Goshen was second overall, followed by Fremont and Sheridan counties. In 1982, Goshen County led the state in number of farm proprietors, followed by Fremont and Park counties. In terms of 1983 agricultural wage and salary employment, the leader was Park County, followed by Goshen and Laramie counties. The highest percentage of county personal income related to agriculture in 1983 was in Washakie County, followed by Niobrara and Johnson counties.

Wyoming agriculture has suffered from a variety of negative influences in recent years, not the least of which have been high interest rates, low commodity prices, and weather-related losses. According to the Wyoming Occupation Outlook, published by the Wyoming Employment Security Commission, agriculture is the only industry expected to experience a decrease in employment in the near-term. This trend is similar to a trend nationwide. Agriculture's share of the total Wyoming job market is expected to shrink from 7.0 percent in 1984 to 4.6 percent by 1990.

MINING SECTOR

Among the basic components that drive the Wyoming economy, none are more important than those that comprise the mining sector. In 1984, 70 percent of the state's total assessed valuation was based on minerals production. The critical elements of the sector are fossil fuels, principally oil, natural gas, and coal production.

While the mining sector long has been an integral part of the Wyoming economy, it became

the dominant force in the state's economy during the 1970s. The Arab Oil Embargo of 1973, and uncertainty about future domestic supplies, caused an overhaul of traditional energy policies. In 1973, minerals valuation accounted for 34 percent of the state's total valuation; by 1984, that figure had risen to 70 percent. The dramatic rise in valuation was the result of increased prices for minerals commodities and selected production increases in areas such as coal.

The dominance of the mining sector in Wyoming also can be illustrated by comparing U.S. and Wyoming employment patterns. In the nation overall, manufacturing accounts for over 20 percent of total employment, while in Wyoming, manufacturing accounts for only 3 percent to 5 percent of such employment. On the other hand, while in the U.S. overall mining accounts for barely 1 percent of total employment, in Wyoming it accounts for 13 percent to 18 percent of total employment.

Because of its high mining employment, Wyoming's response to national economic fluctuations often does not follow national norms. In 1982, for example, the national recession was bottoming out. In Wyoming, however, a recession was just beginning. One reason for the lag was that minerals production continued in Wyoming through the national recession, at least until stockpiles became too large to warrant further production. As the national recovery commenced, the stockpiles accumulated during the slowdown kept demand for new production low, resulting at last in a slowdown in the Wyoming economy.

As noted, the dominance of the mining sector by some measures is of fairly recent vintage. Personal income data published by the Bureau of Economic Analysis (BEA), for instance, indicate that in 1959 mining and agriculture contributed identical 8.9-percent shares to total state personal income. By 1969, however, mining rose to a 9.7-percent share, while agriculture dropped to a 6.4-percent share. The most dramatic mining sector increases occurred in Campbell and Sweetwater counties. In Campbell County, the percentage of personal income contributed by the mining sector increased by 15.7 percent between 1959 and 1969, while in Sweetwater County the increase was 9.9 percent. Fourteen of Wyoming's 23 counties experienced such mining related growth during the decade. In Campbell and Sweetwater counties in particular, the increase was related to the new genesis of Wyoming coal, which found favor as a fuel for power plants as a result of its price and its low-sulphur characteristics.

Coal and uranium led the way during the production boom of the 1970s, although there was a resurgence in oil and gas activity as well. Such commodities as iron ore, bentonite, cement, and sand and gravel also contributed to the expansion cycle. Between 1970 and 1980, coal production experienced a 12-fold increase and uranium production more than doubled. Assessed valuation on coal increased by over 60 times during the decade. Assessed valuation on oil production increased by over five times, due mainly to increases in price.

Natural gas production rose by 10 percent during the 1970s, while crude oil production in the state decreased. After 1974, however, exploration continued at a strong pace. Throughout 1977, an average of 118 exploratory rigs drilled for oil in the state. During that year, 40 new fields were discovered. In the case of oil, however, the new discoveries were not sufficiently large to offset declining production from the state's large, older fields. Campbell and Park counties were consistent leaders in state oil production throughout the decade of the 1970s.

Although the boom in fossil fuels was of primary importance, other segments of the mining sector expanded as well during the 1970s. The production of trona, for instance, grew from about 4 million tons in 1970 to 12.1 million tons in 1980. In real terms, the value of trona production rose by roughly 4.5 times during the decade. With the resurgence in drilling activity, bentonite demand also remained fairly strong.

The shift from agriculture to mining also continued. In terms of total personal income generated, mining accounted for 9.3 percent of the state total in 1970, rising to 19.4 percent by 1980, according to BEA data. During the same period, agriculture's share of total personal income dropped from 6.4 percent to 2.1 percent. In 1970, mining outpaced agriculture in terms of personal income generated in only eight counties; by 1980, that number had swelled to 17.

Over the same period, total wage and salary employment in the mining sector statewide increased by 210 percent. Even larger increases were experienced in selected counties, including Campbell (273 percent), Sweetwater (343 percent), Carbon (373 percent), and Lincoln (389 percent) counties.

During the early 1980s, coal production continued to increase, though not at the explosive levels experienced during the 1970s. Because of relatively low electricity demand, plans for new power plants were cancelled. In addition, regulations that required sulphur removal equipment on new power plants dampered demand for low-sulphur western coal.

The shift toward the Powder River Basin and away from other coal regions in the state also continued. In 1983, 78 percent of the state's entire coal production was in Campbell County.

Gas production continued to increase, led by new discoveries in the Overthrust Belt of western Wyoming. New oil discoveries were also made in the Overthrust Belt and the Powder River Basin. While the new discoveries were not of the magnitude that would reverse Wyoming's pattern of generally declining production, such new discoveries (along with the application of enhanced recovery techniques) probably mean that Wyoming will continue to lead the Rocky Mountain Region in oil production into the foreseeable future.

The uranium industry, one of the boom industries of the 1970s, has nearly ceased to exist. In early 1980, the uranium industry in Wyoming employed some 5,400 workers. By the end of 1985, it appears that only one company will still be active.

The percentage of the state's personal income generated by the mining sector decreased between 1980 and 1983, from 19.4 percent to 15.7

percent. Even bigger declines were experienced in selected counties, including Big Horn (-9.8 percent), Fremont (-13.7 percent), Carbon (-18.6 percent), and Converse (-20 percent) counties.

At the same time, mining wage and salary employment also showed large drops between 1980 and 1983, falling by 27 percent overall. In Platte County, such employment fell by 82 percent, in Carbon County by 57 percent, and in Converse County by 54 percent. On the positive side, mining wage and salary employment increased by 64 percent in Uinta County during the period, thanks to major development work in the Overthrust Belt. Such employment in Campbell County, in the heart of coal country and at the focus of recent oil exploration activity, increased by 27 percent. During 1984, of the 511 exploratory wells drilled in the state, 365 were drilled in the Powder River Basin.

According to the Wyoming Occupational Outlook, published by the Employment Security Commission, mining employment in the state is expected to increase through 1990, from 29,786 total workers in 1984 to 39,673 in 1990. One factor in the outlook is that electricity demand is expected to increase considerably over the next 20 years. If this occurs, Wyoming's coal industry should be at the forefront of growth in the mining sector. In addition, mining of construction products such as sand and gravel also is expected to remain strong.

While mining employment is expected to increase by about a third, the mining sector's share of the total job market is expected to remain virtually unchanged. Mining's share of the job market is expected to increase from 13.1 percent in 1984 to 13.9 percent by 1990.

Selected areas of the state are anticipating considerable mining activity. The Overthrust Belt and other areas of western Wyoming are expected to see continued oil and gas activity, as well as employment swells resulting from the LaBarge Project. The Campbell County Monitoring Program 1984 Report indicates that total employment in the mining sector there is expected to increase by more than 1,500 jobs in the next five years, due almost entirely to projected increases in the coal industry. Total employment in Campbell County's coal mines is projected to reach 4,460 by 1989, an increase of nearly 60 percent over 1984 levels. Projections notwithstanding, however, considerable uncertainty remains concerning the competitiveness of Powder River Basin coals in national markets and growth in total demand.

The Employment Security Commission also predicts stable to slightly lower employment in Campbell County's oil and gas employment through 1986, followed by a slight increase through 1989. No plans are on the horizon for uranium development in the county. Given the many difficulties associated with the industry, uranium mining is not expected to be a factor in Campbell County in the near-term.

CONSTRUCTION SECTOR

Construction is often considered an industry, but because it is not a single activity but a group of activities related by technologies and institutional settings, it is probably most appropriate to consider construction an economic sector. Construction is both highly seasonal and periodic in nature. Construction activity peaks during the warm summer months; at the same time, a construction worker is often employed from one project to the next, rather than on a continuous basis. The term "journeyman" provides some clue to the highly transient nature of much construction work.

Because the construction sector is fractionalized into many crafts and activities, its total scope is somewhat difficult to determine. Due to its secondary effects, however, it is probably fitting to consider construction (especially heavy construction) a basic sector of the Wyoming economy.

Bureau of Economic Analysis (BEA) data indicate that total wage and salary disbursements in the construction sector decreased from a high of $460 million in 1981 to $276 million in 1983. Wage and salary disbursements in recent years have been strongly influenced by heavy construction, which continued to lead the way even at the bottom of the recession in 1983. Heavy construction, in turn, has closely tracked performance in the mining sector in recent years. In 1984, according to Employment Security Commission data, employment in the construction sector stood at 17,567, accounting for 7.7 percent of the state's total employment.

Many major construction activities have contributed to the state's economy. Major construction projects have included highways, railroads, water projects, power plants, and military installations.

In 1959, the construction sector generated a slightly higher percentage to total state personal income than either mining or agriculture, according to BEA statistics. In that year, construction accounted for 9.0 percent of total state personal income, while mining and agriculture each accounted for 8.9 percent.

During the decade of the 1960s, however, the construction sector's share of state personal income dropped, to 6.1 percent in 1969. Declines were registered in 19 counties by 1969, with only Big Horn, Converse, and Niobrara counties experiencing increases. Lincoln County witnessed the largest decline, with construction dropping from a 24.1-share of county personal income in 1959 to an 11.6-percent share in 1969. In 1959, construction generated a higher percentage of personal income than both mining and agriculture in seven counties (Albany, Laramie, Lincoln, Park, Sheridan, Sweetwater, and Teton). By 1969, the number had dropped to four (Albany, Laramie, Sheridan, and Teton).

During the decade of the 1970s, the amount of state personal income generated by the construction sector increased by 3 percentage points. However, construction booms in selected counties pushed some county totals considerably higher. The most notable such increase was in Platte County, where the percentage of county personal income generated by the construction sector rose from 6.1 percent in 1970 to 27.2 percent in 1980 as work progressed on the

Table 5: Construction as a Basic Sector in Wyoming Counties.

Wage & Salary Employment (1983)	% Personal Income Related to Construction (1983)	Composite Rank
1) Natrona (2290)	Campbell (11.9)	Campbell
2) Campbell (1927)	Teton (8.1)	Natrona
3) Laramie (1608)	Lincoln (7.8)	Sweetwater
4) Sweetwater (1258)	Uinta (7.6)	Teton
5) Sheridan (930)	Washakie (6.3)	Uinta
6) Fremont (885)	Natrona (6.2)	Park
7) Park (750)	Park (6.0)	Lincoln
8) Weston (719)	Sweetwater (6.0)	Sheridan
9) Uinta (664)	Converse (5.7)	Fremont
10) Teton (637)	Fremont (5.6)	Laramie
11) Albany (500 est)	Sheridan (5.5)	Washakie
12) Lincoln (468)	Big Horn (5.5)	Converse
13) Carbon (436)	Hot Springs (4.9)	Carbon
14) Converse (330)	Carbon (4.5)	Big Horn
15) Washakie (274)	Sublette (4.4)	Weston
16) Big Horn (240 est)	Laramie (4.2)	Albany
17) Goshen (167)	Niobrara (4.1)	Hot Springs
18) Johnson (109)	Crook (4.0)	Sublette
19) Crook (106)	Albany (3.8)	Crook
20) Sublette (100)	Johnson (3.2)	Goshen
21) Hot Springs (96)	Goshen (3.1)	Johnson
22) Niobrara (84)	Weston (2.6)	Niobrara
23) Platte (84)	Platte (2.3)	Platte

*Based on Bureau of Economic Analysis (BEA) data.

Missouri Basin Power Project's Laramie River Station power plant near Wheatland. BEA wage and salary employment data for Platte County also illustrate the magnitude of the impact, as construction employment jumped from 50 in 1969 to 1,223 in 1979. Other significant increases occurred in Campbell County, which increased from 449 in 1969 to 2,513 in 1979, and in Sweetwater County, which swelled from 357 in 1969 to 2,701 in 1979. Overall, construction wage and salary employment increased in every county except Niobrara during the decade, according to BEA statistics.

Power plant construction reached a crescendo during the 1970s. Among the projects completed or initiated during the 1970s were the Laramie River Station near Wheatland, the Jim Bridger Power Plant east of Rock Springs, PP&L's Wyodak facility in Campbell County, and the Dave Johnston Power Plant in Converse County.

Railroad and highway construction projects also helped boost the economy during the 1970s. Expanded coal-mining activities created a need for upgraded transportation links. Railroad spurs were constructed in both southern and northern Wyoming coal regions to facilitate coal hauling to mainline routes. Work also continued on the state's Interstate Highway System.

During the early 1980s, the percentage of state personal income generated by the construction sector decreased, from 9.3 percent in 1980 to 5.8 percent in 1983. Over the period, only three counties (Niobrara, Uinta, and Washakie) registered increases in the percentage of county personal income generated by construction. Construction wage and salary employment for the state also declined, falling from 20,481 in 1980 to 14,027 in 1983.

As power plant construction wound down, Platte County experienced the largest construction declines in the state between 1980 and 1983. The percentage of county personal income related to construction dropped from 27.7 percent in 1980 to 2.3 percent in 1983, while construction wage and salary employment dropped from 1,082 to just 84 over the same period, according to BEA data. Other significant declines occurred in Campbell, Carbon, Hot Springs, Sublette, and Sweetwater counties.

According to the Wyoming Occupational Outlook, published by the Employment Security Commission, construction employment is expected to grow the most of any sector between 1984 and 1990. By 1990, according to the report, construction employment is expected to account for 9.9 percent of all state employment. In geographic terms, construction is expected to remain particularly strong in southwestern Wyoming, as work continues on several major projects. The largest is Exxon's $2.2-billion LaBarge gas-processing project. Delays in the start of Phase II activities resulted in lower construction employment than was originally anticipated for the third quarter of 1985; however, some estimates suggest that employment reached 4,000 by October. When completed, the project's $900-million Shute Creek gas-processing plant will be the largest in the northern Rockies, with a capability of processing 1 billion cubic feet of raw gas per day. Among the important plant products will be substantial quantities of CO2. One market for the CO2 is expected to be Amoco Production's enhanced oil recovery project at Bairoil, Wyoming, a project that by itself may add 1,000 construction jobs to the state's total. Another spinoff, a proposed 642-mile pipeline from Rock Springs to North Dakota, could employ an additional 900 workers by next summer.

TRAVEL SECTOR

Travel is a fourth major source of export income in the Wyoming economy. During 1977, travelers spent an estimated $481.2 million in the state, according to U.S. Travel Data Center figures. By 1980, similar estimates suggest travel expenditures had grown to $684.0 million, an increase in real terms of 4.3 percent over 1977.

In a report by Shelby Gerking and John Merrifield of the University of Wyoming, it was estimated that approximately 32 percent of travel expenditures become direct personal income. Under the assumption that re-expenditure of direct income accounts for indirect and induced effects at least equal to direct effects, the report estimated that total personal income from travel was approximately $310 million in 1977 and $440 million in 1980.

The travel sector is similar to construction in that its total scope is difficult to delineate. Rather than a single

activity, it is a group of activities which defy neat classification. A restaurant, for instance, serves both local patrons and travelers. The gift shop that sells Christmas presents to local residents may also sell souvenirs to tourists. In Wyoming, however, two travel segments are important to define: tourism and commercial travel.

Tourism might be viewed as leisure or vacation traffic, while commercial travel might be considered travel necessitated by business activities. The importance of each type varies with locale. In communities such as Jackson and Cody, gateways to the national parks, tourism travel might be considered preeminent, while in mining areas such as Gillette, commercial traffic would take on added importance.

In a speech recently published by the Wyoming Hotel/Motel Association, John Hunt, Ph.D., George Washington University, described some of the difficulties in approaching problems of Wyoming's travel sector due to its "condition of fragmentation." He noted that such adverse conditions as the recession of 1982 might be a blessing to the travel industry "if it leads to the realization by local, state, and national leaders that travel held up well in the face of economic adversity and it is, indeed, a legitimate economic and social activity in our nation and the world."

Hunt noted significant changes in travel patterns during the 1970s in most western states characterized by sparse populations at a considerable distance from large, out-of-state population centers, and having histories of mass tourism served primarily by personal automobiles. The 1970s started on an upbeat note, but the Arab Oil Embargo of 1973 and higher gasoline prices robbed travel of some of its momentum. Travel recovered briefly, Hunt said, only to turn down as the decade ended. Travel, then, was closely tied to national economic trends.

"Later marriages, smaller families, two-job households and other changes in male and female roles also will undoubtedly affect travel destination preferences," according to Hunt. "It has been said that price sensitivity among travel products may give way to time sensitivity as members of two-job households attempt to coordinate travel time alternatives."

Nevertheless, Hunt saw tourism as one vital cog in Wyoming's economic future. While noting the boom-bust propensities of the mining sector, agriculture's dependence on national and international markets, and the state's remoteness as an impediment to high-tech manufacturing, Hunt pointed out that "tourism is probably the only major industry that can be favorably influenced by state-government-level development and promotion programs."

Tourism travel can be segmented according to the time of year and the activities available during a particular season. In Wyoming, winter tourism traffic comes from alpine skiers, snowmobilers, and other winter enthusiasts. Fall is directed in large measure to hunting activity. Summer remains the peak season and provides the opportunity for a variety of family oriented activities.

Travel indicators emphasize the importance of the summer season in tourism traffic. Between June and August of 1984, for example, visitation estimates at Grand Teton, Yellowstone, Big Horn NRA-South, Devil's Tower, Fort Laramie, and Fossil Butte indicate that an average of 65.39 percent of total visitation for the year occurred during the summer period. Hotel and motel sales and use tax collections are another widely used indicator of the travel sector. In 1984, an average of 35.19 percent of such collections statewide were made during the June through August period. The highest such percentages were in Sheridan and Park counties, while the lowest were in Washakie, Natrona, and Campbell counties. In dollar terms, the largest amounts of money collected during the June through August period were in Teton, Laramie, Sweetwater, and Natrona counties. Since 1972, Teton County has consistently ranked first in collections for the period.

The outlook for Wyoming travel depends upon many factors, perhaps chief of which is the condition of the national economy. A strong dollar overseas, for instance, might result in a preference for overseas rather than long-range domestic travel. Conditions in the mining sector, moreover, will continue to have a direct impact upon local commercial traffic. Competition and marketing of the "travel product" also are important considerations. In recent years, states such as Alaska and Utah have mounted highly visible campaigns for the tourist dollar. In addition, as peak season visitations to the state's national parks level off, development of tourism traffic during the spring and fall "shoulder seasons" have become the focus of increasing attention.

S.T. Mast and Ruth Tebbutt, IPR

# #

Fremont, Park Counties Illustrate

Ups and Downs of Basic Sectors

If two counties could be considered representative of the Wyoming economy in recent years, Fremont and Park might be good candidates. Each has relied heavily on basic sector activities--mining, agriculture, travel, and construction--the heartbeats of state economic activity. Each has also been subject to the larger economic forces that have affected basic sector activity.

But while the two counties might be similar in general form, they are different in particular character. As a result, the economic fortunes of each have been markedly different.

Historically, Fremont County has depended heavily on the mining sector. During better times, the Fremont County mining sector has included a balanced mix of uranium development, iron ore mining, and oil and gas development. Indeed, in better times.

Since 1980, Fremont County's uranium industry has all but died, taking with it over 1,500 industry related jobs. In 1980, uranium employment reached 2,019 in association with seven active mines in the county. By the end of 1984, however, employment in the county's uranium industry had plunged to just 271. Only one mine remains active in the once-thriving Gas Hills region. Ironically, the sole remaining mine is also the site of the first uranium discovery in the Gas Hills.

If anything, iron ore mining in Fremont County has fared even worse. It has ceased to exist. On October 1, 1983, U.S. Steel's Atlantic City mine and mill were closed, the only iron ore mining operation left in the state. During its heyday, the Atlantic City operation employed 500 persons.

The picture has been brighter for oil and gas, although most of the work is focusing on development within existing fields rather than on new discoveries. B. H. Balthrop, district manager for Amoco Production in Riverton, described conditions in the county's oil and gas industry as "stable," both in terms of field activities and employment. Most of the current field activity is related to secondary and tertiary recovery. Additional gas development, said Balthrop, has been thwarted by market conditions. In terms of oil production, Balthrop said the local industry is experiencing nothing more than the normal declines expected with older fields, a condition common throughout the state.

In 1983, 61 applications for permits to drill were filed for Fremont County properties (permits to drill are required by the Wyoming Oil and Gas Conservation Commission prior to drilling any oil, gas, or enhanced recovery wells). One new discovery was made in 1983, while two were made in 1984. Total 1983 production was 6.5 million barrels of oil and 50.9 million mcf of gas. In 1984, production was 6.1 million barrels of oil and 45.5 million mcf of gas. Hardly a boom, but not a bust either.

The bust is Jeffrey City. If a delapidated billboard proclaiming, "Western Nuclear, Inc., Wyoming's first uranium mill, Jeffrey City, Wyoming," appears like something from a bad dream, then the remaining residents are the survivors of that dream.

Cliff Bloomenrader, owner of the local grocery store, has been in business for 28 years. He has watched things blossom, he has watched things fold. He talked like a man running short of hope.

"I have no plans right now," said Bloomenrader. "I am just trying to hang tight, to see if this oil industry will do anything. This has been our home, our business, for all those years. I don't know what to expect. I don't have any idea. Can't start over, it's too late in life. It is a terrible situation, but there is a lot of other people in the same situation. It is too bad it has to come to that."

Bloomenrader took some comfort in Pathfinder Mines' activities in the Gas Hills, the sole remaining uranium operator in the area. The French-controlled firm has modernized the Lucky Mc Mill. Some experts, however, view the operation as a hedge against other sources of supply, rather than as a primary production venture.

Down the street, Hub Thompson at K-Bar Liquors has watched his business halved and halved again. It is down 80 percent from the volume of the early 1980s. He doesn't expect a turnaround in the uranium industry much before the year 2000.

The effects of the uranium skid have been felt throughout Fremont County. Coupled to that have been the effects of U.S. Steel's decision to close its Atlantic City iron ore operations. Even though the events themselves are years past, their effects continue to linger.

Linda Van Fleet, manager of the Lander Chamber of Commerce, said the upcoming winter could make the difference for many businesses. That view was shared by Jim Gibson, owner of the Pronghorn Lodge and president of the Lander Motel Association.

The normal impulse of a good businessman is to remain in business. Sometimes it is three years after the fact of a major shutdown before

a business simply can't be made to work any longer.

"A year ago," said Gibson, "I said Lander will be hitting bottom by this time of the year. And that's not true anymore. I find I was wrong by at least a year. There are still businesses closing."

Gibson noted that tourism traffic last summer was comparable to the summer before, which is to say "somewhat down from previous years." But tourism traffic won't keep a Jim Gibson in the black.

"Our biggest problem in this community is that we have lost so much commercial traffic," said Gibson, an occurrence he attributed to the losses suffered by the mining sector. "When a shoe store closes downtown, we don't see that salesman anymore. Tourism is nice and that's the icing on the cake. But the commercial guy is what keeps you alive. In the wintertime, if you don't have some commercial traffic you might as well shut the door and head south. We've been hurt badly on the commercial traffic."

Georgia Soumas, president of the Riverton Hotel/Motel Association, echoed similar sentiments. In the past, her bread-and-butter customers at the 4-W Inn were commercial travelers. That business has declined dramatically. "People who used to come in every three weeks or once a month are now stretching it out to maybe once every two months," she said. Many Riverton motels have been sold or foreclosed or repossessed or all three in recent years, according to Soumas. Indeed, Soumas was scrambling to refinance or reorganize the 4-W Inn. The precipitating factor in the decline of commercial traffic may have been the mine closures, but the net effects have cut across many sectors. Grocery salesmen come less frequently from Billings; so do hardware and implement salesmen. "The sales are not out there," concluded Soumas.

Soumas' contention seems to be supported by Fremont County sales tax data. In 1982, Fremont County sales tax collections amounted to $5,983,443 during the first six months. In 1983, generally regarded as the bottom of Wyoming's recession, county collections fell to $4,621,277 during the first six months. But the decline continued, falling again during the first six months of 1984 (to $4,153,254) and the first six months of 1985 (to $4,131,000).

In June 1985, the American National Bank in Riverton failed. Charlie Krebs, president of Riverton's First Wyoming Bank, said a major factor in the bank's demise was a deteriorated loan portfolio, in large measure related to adverse conditions in the local economy.

"They were not all agriculture loans, either," said Krebs. "They were from installment consumer loans to agriculture loans to commercial loans and real estate loans."

Krebs felt there would be additional business failures. At the same time, however, he noted that a new shopping center was under construction. "Everybody is wondering what they see up there that the rest of the town is not seeing," he said. "One thing in rural America--not just in Wyoming--that seems to be happening is that retail businesses are leaving downtown areas and going to little shopping centers. Although the intention of these developers is not to rob any stores from downtown. The ones we are talking to are all from out of town." Whether the new stores will fill gaps in unmet needs or simply slice the existing pie a little thinner, however, is open to question.

From his experiences in both Lander and Riverton, Krebs said it appeared to him that businesses faring the best in competitive situations have attracted traffic from the Wind River Indian Reservation. He counted the traffic among the big economic forces in the county, due to the per capita income checks received monthly by Shoshoni and Arapahoe tribal members. Other assistance, such as food stamp allotments, also bolster spending by tribal members.

Bruce Maytubby, realty officer for the Bureau of Indian Affairs, Wind River Agency at Ft. Washakie, estimated that 80 percent of the income tribal members receive is related to oil and gas activity. Eighty-five percent of the income received by the tribes is paid out in per capita payments to individuals, while 15 percent is used for tribal operations. At present, per capita payments are $300 per month to Shoshonis and $200 per month to Arapahoes.

Agriculture is another important activity on the reservation. Near Ft. Washakie, there are pasturelands and cattle. Closer to Riverton, there are crop operations. The Crowheart area is a mix of the two.

Soil conservationist Larry Beneker said of approximately 500 leases on the reservation, approximately two-thirds are held by indian operators. Due to factors such as low prices and increased irrigation water charges, however, Beneker said the general condition of agriculture on the reservation was poor.

The same might be said for agriculture countywide. J.C. Sollars, Farm Bureau special agent in Lander, said Fremont County agriculture had a bad year through the summer months.

Drought conditions affected both pasturelands and crops. Operators in Crowheart went on water-rationing almost before they turned in the ditches. Then webworms hit the alfalfa. Then came the grasshoppers. Coupled to these were continuing low cattle prices. "The only thing we've got left is an early frost and a tough winter and I guess that wraps up the season," said Sollars.

In terms of insurance writing, Sollars said many agriculture-related policies have gone from annual premiums to some type of financed premium due to cash flow problems. "If you do annual audits and talk about insurance," said Sollars, "it was obvious last year, and is certainly going to be more obvious this year, that people are very concerned about their operating expenses from the standpoint of what they can cut and still keep their policies intact."

For agriculture, said Sollars, a depression has arrived: "If it wasn't for bad luck," he said, "agriculture wouldn't have any luck at all."

Range management consultant Dick Loper assessed the general state of Fremont County agriculture as "rather typical of the rest of the state. Many, many are on the brink this time. There is a tendency to poor-mouth in agriculture, but this time I think it is for real."

In addition to problems associated with costs and weather, Loper said part of the problem was fundamental in that some operators "simply are not good enough businessmen."

Loper said the cost of doing business on public lands has also adversely affected some ranchers. One particular item he cited was a shift in the responsibility for maintaining improvements on public lands from a shared responsibility between ranchers and federal agencies to a sole responsibility of lessees. In some cases, Loper said, the shift has added from $2,000 to $4,000 to the rancher's overhead costs.

The depressed state of the agricultural sector was reflected in the business of Phil Laue, owner of Valley Implement in Riverton. Valley Implement carries both John Deere and New Holland equipment. By summer's end, Laue said his sales were off perhaps 25 percent from a year earlier, and probably down 50 percent from two years earlier. From the standpoint of cash flow, Laue said parts and service was a good business since many operators were opting to repair their old equipment rather than buy new. "As far as the bottomline," said Laue, "they're (parts and service) all we got going for us, really, right now."

Joanne Mulholland, land appraiser for the Public Lands and Farm Loans District Office in Lander, appraises agriculture lands for loan securities. She said even in the year she had been with the office, land values had dropped. "We have to be real concerned with that and make sure our appraisals are conservative," she said, "because the chances of getting the place back are a lot greater now than they use to be because of the economy."

In the Lander Valley area, realtor Hugh W. Jones said "trees and rivers and mountains and creeks are worth a lot more than grass anymore." He noted that a number of local ranches were held by wealthy people who wanted "hideaway places" more than working ag properties. "Agriculture has an impact here," he said, "but it is not like it use to be in the olden times."

While not minimizing Lander's economic difficulties, Jones said he felt the psychological effects of U.S. Steel's decision to close the Atlantic City operation may have been more devastating than the actual impacts. He said at his last count, there were about 130 houses for sale in Lander. Fairly high, he said, but not as high as 20 years previous when the construction phase of the U.S. Steel operation was completed.

In terms of employment impacts, Jones said many of the U.S. Steel workers took early retirement because they had enough time in, thus mitigating the layoff impact. In addition, said Jones, Lander's diverse medical community continued to expand. Partly because of the medical services, he added, many people from towns such as Rock Springs and Kemmerer have inquired about Lander as a place to retire.

"I think we have bottomed out," said Jones, "and I think we are starting up again."

Moreover, Jones contended, the seeds of Lander's economic redemption are already in the ground. It is just a matter of cultivating them. "The paper ran a letter here awhile back wanting to know which way Lander should go. I think it should go three ways. It should go on medical, which we have. It should go on retirement potential, which we have, and recreation. We have all three of those things. We don't have to go out and get heavy industry, or any kind of industry."

While Fremont and Park counties have some things in common, there are important differences in the characteristics of their basic sectors. For one thing, the Park county mining sector is dependent almost entirely on oil and gas activity. In 1983, according to

Department of Economic Planning and Development statistics, oil accounted for 83 percent of Park County's total assessed valuation, and 97 percent of the minerals valuation. For that year, Park County remained the top oil-producing county in the state.

Oil production has been declining since the late 1960s in Park County, mainly because Park County's fields are older and have passed their production primes. The Oregon Basin Field, for example, was discovered in 1912, while the Elk Basin Field was discovered in 1915. In addition, as unit valuation has declined, so has the assessed valuation on oil production.

Even with the declines, however, output has remained prodigious. In 1983, taxable oil production was 21,371,025 barrels. Nothing that has occurred in the Park County mining sector can match the negative impacts associated with the demise of iron ore mining and the radical decline in uranium activity in Fremont County.

New exploration in the Bighorn Basin has been at a relatively low ebb. One recent exception was Marathon's much-celebrated dry hole in the forestlands west of Cody, an effort that required helicopters to transport drilling equipment. In the main, recent activities have focused on development within existing fields, including both secondary and tertiary recovery.

In 1983, 98 permits to drill were filed for Park County properties, falling to 75 in 1984. One new discovery was made in 1983 and none in 1984. Total 1983 production was 23.5 million barrels of oil and 10.3 million mcf of gas, compared to 21.9 million barrels of oil and 12.8 mcf of gas in 1984.

While both Fremont County and Park County agricultural operators share many of the same problems that plague farms and ranches nationwide, there are some important distinctions. Park County agriculture tends to be larger from a production standpoint and more diversified overall than Fremont County. In 1984, according to the Wyoming Crop and Livestock Reporting Service, Fremont and Park were about equal in cattle numbers, with Fremont the leader in stock sheep. In crop categories for 1983, however, Park County was the clear production leader in such areas as wheat, barley, oats, dry beans, and about equal to Fremont County in corn production. In addition, Park County has an important sugar beet industry, while Fremont County has none.

The return of a sugar-beet crop to eastern Park County was a bright note this past summer. In 1984, wrangling between growers and Great Western Sugar over a contract meant the absence of a sugar-beet crop. Since then, the sugar company has changed hands, a new contract is in force, and growers are happy again.

"Sugar beets seem to be a quality product that we need in this area," said Ralph Borcher, the mayor of Powell. "I think it is really going to help the economy."

Officers at Powell's First National Bank also were glad to see the return of sugar beets. Loan officer Gary Mills detected a new sense of optimism in the community that he felt "relates back to our beet contract. That has been a stabilizing factor in this community since I don't know when."

The First National Bank holds a high percentage of the ag paper in the Powell area, according to Ben Avery, officer in charge of loan administration. Holding so many agriculture notes, however, has not created any particular problems because the quality of the loans has remained high. For one thing, said Avery, as inflated land values moved upward during the 1970s, First National Bank did not move the values on its statements in a similar manner. Big loans thus were not lent against inflated land values, a conservative posture that bank officers argued had helped not only the bank but the agriculture community as well.

The bank has also operated on the philosophy that financing current operations should be financed from current assets, said Mills, "so you never dipped into the ag customers equity reserve in real estate. From the bank's standpoint, if the guy cannot make it, we can say that maybe it's time you had a farm sale and preserve that $200,000 or $300,000 equity in your land, rather than just eat it up in losses."

While sugar beets were bolstering crops, local livestock producers continued to falter. "The cattle industry is truly in a tailspin," said Avery. "They don't know what is going to happen." Pork producers were experiencing similar difficulties, caught in the squeeze between high costs and low prices. Lambs seemed to hold the brightest prospects for livestock, since beet farmers can purchase lambs and put them on beet tops.

In the travel sector, Cody is more akin to Jackson than Riverton in terms of tourism. Cody is a true gateway community to Yellowstone National Park. Tourism, as opposed to commercial traffic, is thus of greater importance.

Tourism-related travel indicators in the Cody area, however, indicate a leveling out or even declines in visitor numbers in recent

years. During 1981, a total of 453,802 visitors were recorded at the east entrance to Yellowstone Park. This number dropped to 439,339 in 1982, before rising to 456,197 in 1983. Such visitations dropped again in 1984, to 443,178. A related indicator is the number of persons visiting the Buffalo Bill Historical Center for each month of the summer peak season. During 1985, such figures indicated declines from similar periods in 1984. During June 1985, 43,030 persons visited the center, compared to 44,355 during June 1984. In July, the 1985 figure was 70,572, compared to 74,597, while the August 1985 figure was 59,987, compared to 61,920 during the same period in 1984.

Gene Parker, president of the Wyoming Hotel/Motel Association and operator of the Rainbow Park Motel in Cody, said tourism travel in Cody during the past summer season seemed to be comparable to the 1984 peak season in terms of total numbers. As noted, unlike some areas of the state, the local lodging industry in Cody relies heavily on tourism travel during the summer months rather than on commercial traffic. Indeed, said Parker, perhaps half the lodging operations close for the winter after the hunting season has ended.

Parker said the summer season seems to be more "compressed" than in years past in that tourism traffic starts more slowly in June and drops sharply at an earlier point in August. One possible explanation for the change, said Parker, is that the dates of school openings and closings across the country have changed. In terms of the character of the traffic, Parker said there seemed to be "fewer families overall," a difference he speculated might be related to economics.

Sales and use tax collections in Park County for the period June-August held steady at a shade over $2.1 million from 1980 through 1982. In 1983, such collections dipped to $1.9 million, before rebounding to slightly over $2 million during 1984.

Construction in the Cody area helped bolster the local economy during the past summer, as highway construction continued. In addition, construction work is scheduled to begin soon on Buffalo Bill Dam modifications. The joint state-federal venture will likely evolve into a $115-million project, according to Fred Hunt, office engineer at the Bighorn Basin Projects Office. Among other things, the project will include the construction of a new power plant and modifications to the existing Shoshone Power Plant. The dam itself will be raised 25 feet. During peak construction in 1988-1989, 300 persons are expected to be employed on the project.

Despite some difficulties, the Park County economy appeared to be relatively healthy overall. This view was shared by Bill Weiss, president of the Economic Development Council, a committee of the Cody Chamber of Commerce. For one thing, Cody exists in the kind of setting that continues to be attractive as a place to live and work. Weiss himself moved to Cody nine years ago from New York largely because of the community's setting. Weiss said Cody is able to reach many potential new residents and businesses through the tourist and hunter traffic during the summer and fall.

Cody has also evolved into a regional trade and medical center, said Weiss, which serves the entire Bighorn Basin. In terms of the future, Weiss said "rural cottage-type industries" that may have a chance for success in Cody could include such things as confectionary manufacturers (due to the availability of sugar in the area) and mail order firms. "Like every small and big town in America," said Weiss, "we'd like to get some high-tech industry into the community." But, he added, "that is hard to find and the stability of that industry is very fragile. And as a result, often times you are going to be exposing yourself and the community to an awkward situation."

Weiss said he had been "very discouraged" by the lack of support the State of Wyoming had provided local communities in their development efforts. He suggested the state needed more active marketing on a national basis and better public relations both outside the state and within Wyoming itself. Sooner or later, said Weiss, revenues from traditional sources such as oil development will dwindle. Unless Wyoming begins now to attract the kind of industry it wants, he said the state eventually will be placed in the unenviable position of simply taking whatever it can get.

What the state can get, however, is the subject of lively debate. Whether places such as Park and Fremont counties can diversify away from their basic-sector roots, or whether the best prosepcts for future development will come in the form of new offshoots from old economic grounds, is open to serious question.

S.T. Mast, IPR

# #

Economic Development . . . 'Begin with Basics'

(The following is excerpted from an interview with John Logan, manager of the State Industrial Office, Economic Development Division. The interview, which was conducted in September, highlights some of the challenges faced by the state in economic development, especially in light of its basic economic sectors. Minor editing is included for the sake of clarity.)

WQU: How has the State Department of Economic Planning and Development (DEPAD) been reorganized?

Logan: DEPAD has been terminated and all powers and duties transferred to the new Economic Development and Stabilization Board. The past board under DEPAD was primarily an advisory council. This new board has policy making authority and given specific guidelines as to what it will do.

WQU: Is this different from the previous mission of DEPAD?

Logan: Yes, it is going to be a little different. The new board has the governor as a member. The board will hire a new executive director and set an economic development plan for the state of Wyoming. Under DEPAD we had a plan within our own operations, but really no state policy. The plan itself might not specifically dictate exactly what each individual is going to do, but it will establish some long-range goals related to economic development within the state over a given number of years. Possibly, the plan might not cover more than four or five years because administration changes could mean changes in the plan, although that is hard to say. Also, board members rotate. With new chairmen, new members, and new governors, they might have a different view on what we should be doing. But I'm sure they will try to establish a good plan that will be beneficial to all, now and in the future.

WQU: Given the nature of Wyoming's basic sectors--agriculture, mining, tourism, and heavy construction especially--what realistically can be done to influence development, particularly since these are often governed by larger market forces beyond state control?

Logan: Probably the first role we can take to show some positive development would be tied to primary, basic, industrial mineral development. We extract a lot and we ship it all out. We should get into the value-added processing side of some of these areas. Many other fields have to be considered. We are a natural resources rich state. We want to capitalize on it to its fullest.

WQU: Please explain.

Logan: Instead of pipelining all of our oil to Texas or wherever to be refined, or shipping our ag products to be processed in another state, let's do more of the refining and processing right here in Wyoming. With what little we do now, Wyoming is number one in the country in value-added figures. We could possibly do more and improve the job situation, skill levels, and our economy.

WQU: What you are saying, then, is not only extract the raw material but produce finished products as well.

Logan: Yes. For example, we have almost all the elements in this state to make glass, but we are not utilizing them right. We have the glass sands, trona, the energy, but it is being shipped out and finished products processed elsewhere.

WQU: Why?

Logan: I think transportation costs might be the biggest factor. If there was an industry closer that could utilize the glass, the transportation cost might be cut down to a point where the feasibility of having a glass manufacturing plant in Wyoming might look better. And this is one thing we are looking at, since there are a few firms in the region that do use glass products.

Another area would be in plastics. We have the oil and the drilling counts are starting to come up a little. If we could get some of our refineries back on-line, and apply the technology, we might be able to increase the activities for refined products such as plastics. A third area that may be complementary would be petrochemicals.

WQU: What about development of agriculture in the state?

Logan: We are working with the Department of Agriculture and have a couple of items we are working on. In the Goshen and Platte County area, they're trying to build a network between that corner of our state and the northwest corner of Nebraska. Meat packing, slaughtering operations, ag processing in general. The ag people tell me meat packing operations in the Southwest are starting to look further north for future operations. The humidity in those areas and lack of water is a problem.

In the Bighorn Basin, there is the concept of putting a lamb slaughtering facility in Worland. It has been scaled down from its original figures, but it looks like some groundwork will be done there in the near future.

One problem I think we have with the ag

industry is getting down to that value-added figure again. We do not process enough of one commodity in this state to make a processing facility a 12-month operation. We are still going to have to attract the commodities from surrounding states or elsewhere. But this should not be an obstacle.

WQU: What about tourism?

Logan: In my opinion, tourism is a condition of the economic times. If we want to look at diversifying the tourism base, it may possibly be in the manufacture of recreational equipment, but indications point those trends down. Mostly, I think what we can do with tourism is promote it more. Get the word out both outside and inside the state.

The federal parks of Wyoming get most of the promotion. Undoubtedly, those are the destination points of travelers, but the travelers have to go through many points to get there. I think we need more encouragement for the state park areas and other interesting areas, somehow find ways to tell the traveler what the Red Desert really is, rather than just a sign and an arrow pointing it out.

The State Recreation Commission is charged with developing and maintaining state recreation projects. If anything, I think that is one agency that needs more funding. The Travel Commission does a good job. The Recreation Commission should be equally funded and in a position to promote state parks, as we do Yellowstone National Park.

WQU: What about heavy construction? Can much be done, or is that simply a function of what happens in the mining sector?

Logan: I'm afraid that construction and services are so directly tied to the minerals industry that they are going to follow. As the rig count picks up, so has heavy construction. In some cases, you probably see the construction ahead of time because they have to be ready for the increase when it comes along. But I think heavy construction reflects the mining industry.

WQU: It sounds like you are talking about vertical integration, as best you can, of mining, tourism, and agriculture. This rather than attempting to start wholly new industries.

Logan: That's basically where we start. The big word everyone talks about is "diversification." But you have to realize where you are now, how much and what kind of impact there might be, and where new things might happen in the state. Because of markets, some areas in the state would be hard-pressed to attract a good-sized manufacturing firm, so they concentrate on their existing base.

WQU: The other problem, of course, is that you are not operating in a vacuum. According to some estimates, there may be 15,000 people employed nationally who are attempting to attract new industries to their states or towns.

Logan: That's probably a small figure. Considering state, regional and local groups, private development corporations, real estate people, the number is probably closer to triple that. And there aren't that many firms expanding. Our attitude about business has got to become noticeable to people coming into the state. We also have to be flexible in targeting the type of business development we want. We have to decide what type of industry we want and stay with it. In the past, there has been too much jumping around.

We have formed a state association with 30 or 35 different economic development corporations or councils. They are all concerned with what the state is doing. The state is concerned that they all have some idea of what the goals are. They are still maintaining some individualism in that they have to sell their own communities. We are getting to the point, and we're almost there, of convincing one community that doesn't get the business that at least we need to get it in Wyoming. We went through a battle in the latter '70s with that attitude: If it doesn't come into my town, we don't want it.

WQU: What financing assistance can the state provide?

Logan: We have financing tools available. The problem is that almost every one of those in one way or another is tied to federal regulations. We don't have a state financing program where we are using state money to help state businesses expand and grow.

We have financing available for agriculture through the Farm Loan Board with restrictions, but nothing for the non-farm business. Our tax structures are already so good that we would have to raise taxes to build any incentives into them. One theme we used in past advertising is that "Wyoming is incentive enough." Our energy rates are among the lowest in the country. We push that highly. We have excellent land transportation within certain quarters with our three interstate highways. We have generally poor air service. Air service, as everyone knows, is a real problem and that is going to be a problem trying to bring industry into the state.

WQU: How would you rate the prospects for success? Moderately good?

Logan: I think they are better than moderate, and good if we all continue working together and get support.

WQU: Are those the most likely areas for success? In minerals and ag?

Logan: Yes, I think so. The processing and finishing of products that is now being done elsewhere. Others I have talked to feel the same way, and also certainly more promotion of tourism. But we're not narrow minded. We want whatever we can attract into our marketplace.

S.T. Mast, IPR

# #

Covered Employment

Services Increase, While Basic Sectors Decline

The year 1981 marked the last full year of Wyoming's energy boom. With the waning boom and a serious recession during the intervening years, Wyoming Employment Security Commission data for the first quarter of 1985 indicate that employment levels had not recovered to comparable 1981 levels. Average covered employment for the first three months of 1981 was 196,099, according to ESC data, while the average for the same period in 1985 was 182,839. At the same time, examination of the first quarter data indicate some shift in the state's employment mix.

ESC covered employment data encompass approximately 85 percent of Wyoming's total employed labor force. Both full-time and part-time employees are included. In terms of Wyoming's basic sectors, the most complete ESC data are related to mining and construction employment. Since proprietors and most self-employed persons are not included, ESC data related to agriculture are scanty. In addition, since travel-related employment cuts across categories, no specific findings are available.

Covered employment in the mining sector, the bulwark of Wyoming's high per capita income figures during the late 1970s, dropped from 36,429 during March 1981 to 25,061 in March 1985, as the energy boom faded. Despite a decline of nearly one-third in labor force size, however, total mining payroll dropped by only 12.5 percent. This was because the sector's high wages rose even higher during the period. The average weekly mining wage grew from $499.03 during the first quarter of 1981 to $612.99 during the first quarter of 1985, according to ESC data, an increase of 23 percent.

Some segments within the mining sector declined more than others in terms of covered employment statistics. Between March 1981 and March 1985, covered employment in coal mining dropped from 6,226 to 5,938 workers, crude petroleum and natural gas dropped from 3,912 to 3,733 workers, and oil and gas field services declined from 15,815 to 10,271 workers.

Despite a modest decrease in total covered employment, the total first quarter 1985 coal mining payroll increased substantially over comparable 1981 levels, from $44,611,853 to $59,719,295, or an increase of 33.9 percent. Not surprisingly, the average weekly wage in coal mining increased from $549.97 to $772.58 over the period.

In oil and gas field services, on the other hand, increasing wages failed to make up for payroll losses that resulted from dropping employment. While the oil and gas field services segment registered a loss of 5,544 workers between March 1981 and March 1985, the average weekly wage for such workers also decreased, according to ESC data, from $468.57 during the first quarter of 1981 to $466.78 during the first quarter of 1985. As a result of this combination, the total payroll in oil and gas field services fell from $94,985,357 during the first quarter of 1981 to $66,707,759 during the first quarter of 1985.

Metal mining services also showed big drops between the first quarter of 1981 and the first quarter of 1985. During March 1981, there were 760 workers in metal mining services, compared to just 167 in March 1985. Total payroll dropped from $4,474,224 during the first quarter of 1981 to $1,345,899 during the first quarter of 1985.

Overall, contract construction fared less well than mining. Like mining, total covered employment in contract construction dropped, from 19,921 in March 1981 to 13,977 in March 1985. Unlike mining, however, wages failed to keep pace. Average weekly wages rose from $383.15 in the first quarter of 1981 to only $390.41 during the first quarter of 1985. The total contract construction payroll fell by over 30 percent during the period, according to ESC data.

Comparative statistics for contract construction revealed across-the-board declines in all ESC categories of covered employment. The largest numerical declines were experienced in electrical work, residential building contractors, and heavy construction. Comparing March 1981 with March 1985 figures revealed a decline of 1,434 workers in heavy construction, of 1,114 in the residential building contractors category, and of 957 in electrical work. Total first quarter payrolls fell in every category except highway and street construction. Average weekly wages also remained relatively flat.

Comparing March 1981 and March 1985 covered employment data indicates declines in seven ESC employment categories and increases in only three. The winners were services; public administration; and finance, insurance, and real estate. The employment losers were agriculture, forestry, and fisheries; mining; contract construction; manufacturing; transportation, communications, and utilities; wholesale trade;

and retail trade.

The biggest employment gains when comparing the two periods were registered in services, with an increase of 5,667. In addition, average weekly wages increased over 26 percent between the first quarter of 1981 and the first quarter of 1985, from $236.51 to $299.24.

The first quarter comparative employment figures indicate big losses in the highest-paid, basic sector categories, with the biggest gain being registered in the less-well-paid services category. During the first quarter of 1985, the average weekly mining category wage was $612.99, while the average weekly wage in the services category was $299.24. In effect, then, it would take two new service employees to make up for the payroll loss of one mining category employee.

Services categories exhibiting noteworthy growth between March 1981 and March 1985 included personal services (laundries, beauty shops, etc.), with an increase from 1,615 to 1,945; business services (collection agencies, computer services, etc.), with an increase from 3,714 to 4,144; health services (offices of physicians and dentists, hospitals and lab personnel, etc.), with an increase from 9,745 to 10,772; and educational services, with an increase from 19,457 to 23,311. Social services employment, including such things as rehabilitation services and child day care, rose from 3,493 to 4,029.

Other services segments showed declines in covered employment. The most significant service sector decline was experienced in hotels and lodgings employment, which fell from 5,633 in March 1981 to 5,001 in March 1985. Miscellaneous repair services employment also fell, from 935 in March 1981 to 830 in March 1985.

The rise in services employment at a time when basic sector (mining and construction) employment fell is something of an enigma. One possibility is that the increase represents a maturing process in an area of the economy that historically had been underbuilt. The boom years provided the impetus for the maturation.

Table 6: Employment and Payroll Changes by Selected Employment Categories (1st Qtr 81 to 1st Qtr 85).*

March 85 Employment	March 81 Employment	Difference	% Change	1st Qtr 81 Total Payroll	1st Qtr 85 Total Payroll	Difference	% Change
Mining							
25,061	36,429	-11,368	-31%	$235,372,586	$205,912,821	-$29,459,765	-12.5%
Contract Construction							
13,977	19,921	-5,944	-30%	98,330,621	68,192,619	-30,138,002	-30.6%
Services							
58,004	52,337	5,667	11%	158,775,526	223,600,947	64,825,421	40.8%
Public Administration							
11,743	10,251	1,492	14.5%	36,682,835	52,557,895	15,875,060	43.3%
Finance, Insurance, and Real Estate							
8,033	7,495	538	7.2%	26,684,584	35,384,689	8,700,105	32.6%
Retail Trade							
35,381	35,688	-307	-.9%	78,130,556	85,548,653	7,418,097	9.5%
Wholesale Trade							
9,362	11,060	-1,698	-15.4%	54,173,537	50,616,085	-3,557,452	-6.6%

*Based on Employment Security Commission data.

"It would seem we are in a transition in that the things we really depend upon--construction, mining, refineries--have actually declined," said Gordon Wolford, ESC statistical analyst. "But if you think of it in that point of view, when things were booming, we didn't have hardly any services." Then, said Wolford, new firms apparently began looking at Wyoming's "fantastic disposable income statistics" fueled by energy-related activities and new services were introduced.

The question now is whether such new services will survive without the basic sector activities that apparently were responsible for their creation in the first place. "Some of them aren't," said Wolford, "because most of your bankruptcy listings are in retail trade and services. But even at that, there must be a lot of survivors because there are a lot of people in business." Nevertheless, Wolford said he felt "the cake is being cut pretty thin," because more firms appear to be competing for market shares in markets whose total sizes have remained relatively unchanged.

Another suggestion is that more disposable income is being spent on services in the state, whereas in the past the money was spent outside the state or not spent at all, simply because many services were unavailable in Wyoming.

Some areas of services growth are interesting to ponder. The number of persons employed by beauty shops, for instance, increased from 510 during the first quarter of 1981 to 639 during the first quarter of 1985. One possibility is that more women have entered the labor force, either by choice or necessity, in positions where grooming is important. Another is that the hair styles of the 1980s simply require more attention.

"These are tough questions," observed Wolford. "The questions used to be easy when things were booming and everything went up. Now the questions are tough."

S.T. Mast, IPR

# #

Table 7: Wage and Payroll Changes by Selected Employment Categories (1st Qtr 81 to 1st Qtr 85).*

1st Qtr 81 Ave. Week Wage	1st Qtr 85 Ave. Week Wage	% Change	1st Qtr 81 % Total Payroll	1st Qtr 85 % Total Payroll	Difference
Mining					
$499.03	$612.99	23%	29.4%	24.5%	-4.9%
Contract Construction					
383.15	390.41	1.9%	12.3%	8.1%	-4.2%
Services					
236.51	299.24	26.5%	19.8%	26.7%	6.9%
Public Administration					
277.97	346.67	24.7%	4.5%	6.3%	1.8%
Finance, Insurance, and Real Estate					
275.89	339.16	22.9%	3.3%	4.2%	.9%
Retail Trade					
169.55	186.84	10.2%	9.7%	10.2%	.5%
Wholesale Trade					
381.09	417.17	9.5%	6.8%	6.1%	-.7%

*Based on Employment Security Commission data.

ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas in the Wyoming economy in which noteworthy changes occurred, or in which existing trends were significantly accentuated, during the latest reporting period.)

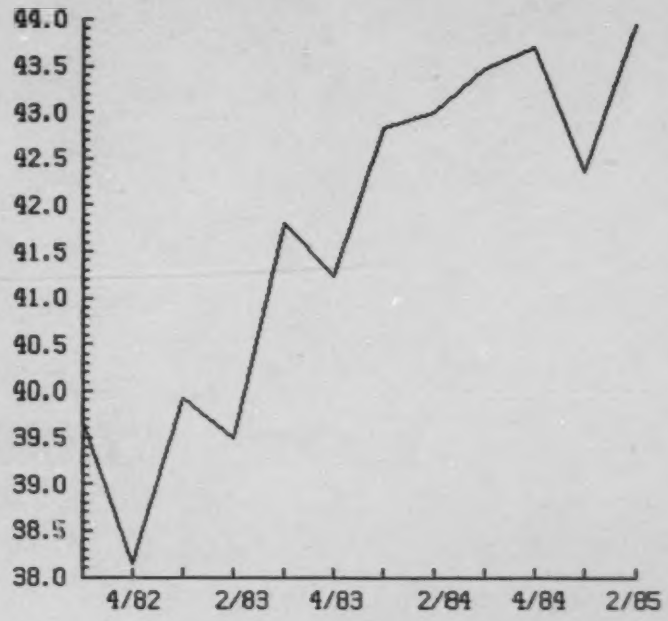
Changes in business failures, bankruptcies, and employment-related statistics are among the highlights recorded in the Update's second quarter statistics.

The number of business failures rose to 78 during the second quarter, the highest number recorded during the Update's 12-quarter reporting period. The value of such failures also reached a high point, as did the number of personal bankruptcies. Personal bankruptcies during the second quarter totaled 204, up from 176 during the first quarter and up from 166 during the second quarter of 1984.

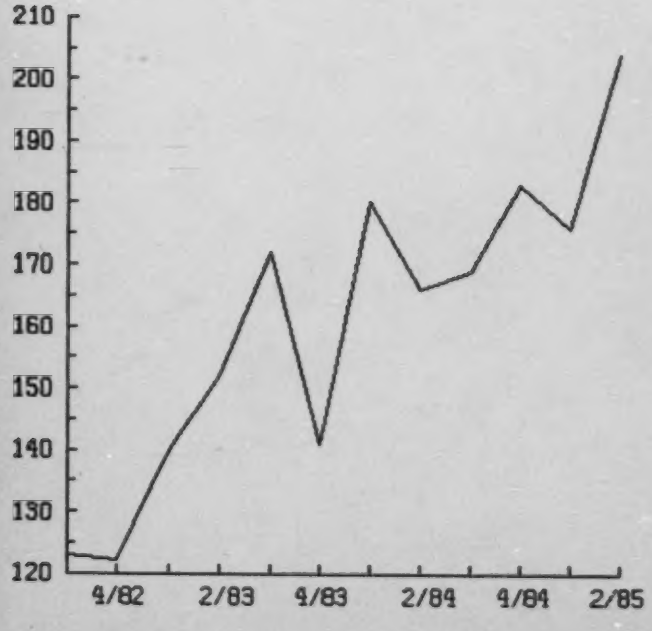
Miners' average weekly hours, after dipping to 42.4 during the first quarter, rebounded to 43.9 during the second quarter, the highest level attained during the Update's 12-quarter reporting period. The unemployment rate and number of initial unemployment claims filed dropped, but to levels that still exceeded comparable levels during the second quarter of 1984.

State oil production continued to increase during the second quarter to its highest daily level in 12 quarters. State oil production increased to 327,000 barrels per day during the second quarter, up from 325,000 barrels per day during the first quarter.

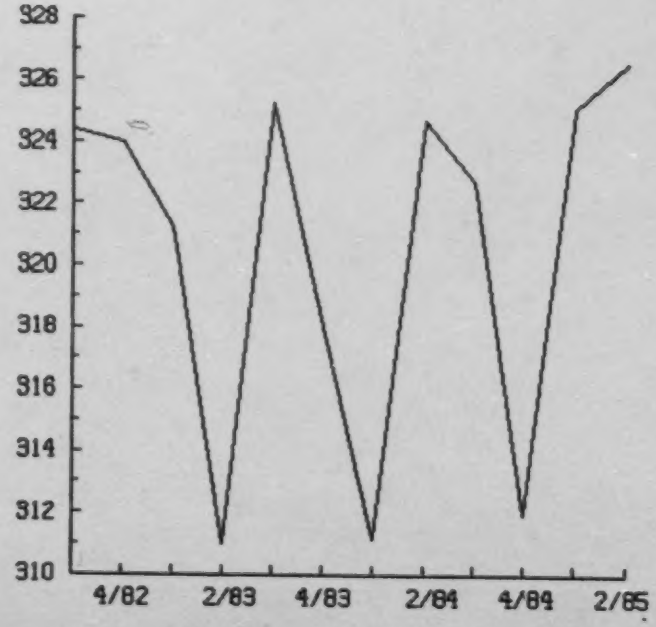
Miners' Average Weekly Hours



Personal Bankruptcies



Wyoming Oil Production



WYOMING DATA

Table 8: Agriculture[1]

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. Timber Cut in Wyoming National Forests (MBF)	23430.	26318.	14707.	5208.	35941.	47574.	21261.	7625.	48671.	63055.	23591.	6564.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	245.	244.	247.	254.	280.	280.	269.	265.	262.	258.	253.	260.
3. Wyoming Crops, Prices Received-Average	239.	243.	246.	253.	268.	279.	270.	270.	261.	260.	256.	259.
4. U.S. Crops, Prices Received-Latest	239.	220.	234.	239.	260.	262.	267.	276.	265.	240.	242.	236.
5. U.S. Crops, Prices Received-Average	235.	221.	226.	244.	255.	258.	266.	275.	271.	253.	240.	239.
6. Wyoming, All Commodities, Prices Received-Latest	250.	225.	261.	246.	239.	244.	252.	242.	255.	251.	265.	243.
7. Wyoming, All Commodities, Prices Received-Average	246.	234.	249.	253.	233.	239.	251.	250.	249.	252.	256.	253.
8. U.S., All Commodities, Prices Received-Latest	248.	232.	245.	243.	248.	256.	265.	262.	254.	245.	244.	235.
9. U.S., All Commodities, Prices Received-Average	247.	234.	240.	247.	247.	249.	264.	264.	259.	249.	246.	237.
10. Wyoming Livestock, Prices Received-Latest	251.	219.	265.	244.	227.	233.	247.	235.	253.	248.	268.	238.
11. Wyoming Livestock, Prices Received-Average	248.	231.	249.	253.	223.	228.	245.	243.	246.	250.	256.	250.
12. U.S. Livestock, Prices Received-Latest	257.	243.	256.	247.	240.	251.	264.	251.	245.	251.	247.	235.
13. U.S. Livestock, Prices Received-Average	258.	245.	253.	251.	242.	241.	264.	256.	249.	247.	251.	236.
14. Prices Paid by U.S. Farmers-Latest	316.	315.	321.	324.	326.	328.	335.	335.	333.	332.	332.	332.
15. Prices Paid by U.S. Farmers-Average	317.	315.	320.	324.	325.	327.	333.	336.	334.	332.	332.	332.

[1] First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2] The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 9: Banking and Finance

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. Total Bank Loans and Leases Financing Receivables (T$)[1]	*****	*****	*****	*****	*****	*****	2313197.	2359492.	2368731.	2352704.	2356267.	2348277.
2. Total Bank Deposits (T$)	3345619.	3587554.	3537206.	3669552.	3683748.	3789387.	3747828.	3812354.	3790977.	4005456.	3808654.	3908435.
3. Total Non Interest-Bearing Deposits (T$)[1]	*****	*****	*****	*****	*****	*****	657189.	734297.	723344.	742392.	652223.	643908.
4. Savings and Loan Mortgage Loans (T$)[2]	766593.	765708.	758938.	760041.	775159.	775795.	767125.	775396.	771560.	806660.	780644.	806897.
5. Savings and Loan Deposits (T$)	893087.	895889.	921290.	960250.	966113.	1006927.	1051271.	1087085.	1111213.	1142593.	1161848.	1193339.
6. Prime Interest Rate[3]	13.50	11.50	10.50	10.50	11.00	11.00	11.21	12.60	12.97	11.06	10.50	9.78

[1]During the first quarter of 1984, the Wyoming State Bank Examiner began publishing it's quarterly report ("The Abstract Report of State and National Banks in Wyoming") in a slightly different format. IPR will therefore be altering the following banking and finance data series: total bank loans and total demand deposits. Beginning in the first quarter of 1984, data for total bank loans will include lease financing receivables; data for total bank demand deposits will be replaced by figures for noninterest-bearing deposits. For comparison, the reader can refer to past issues of the WQU.
[2]Only members of the Federal Home Loan Bank Board are included.
[3]Rate is for the last month of the quarter.

Sources: Series 1-3: Wyoming State Bank Examiner Quarterly Report.
Series 4 and 5: Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

Table 10: Business Conditions

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. New Domestic Corporations	403.	377.	348.	410.	366.	309.	359.	359.	332.	273.	308.	307.
2. New Foreign Corporations	285.	272.	240.	259.	331.	292.	260.	249.	259.	244.	224.	259.
3. Total New Corporations	688.	649.	588.	669.	697.	601.	619.	608.	591.	517.	532.	566.
4. Business Failures	54.	58.	47.	68.	52.	58.	59.	64.	67.	68.	70.	78.
5. Value of Business Failures ($)	-13034324.[1]	-6860186.[1]	6438421.	6400333.	535473.	-8163171.[1]	17789116.	14081414.	11774068.	12763251.	-25485776.[1]	23761569.
6. Personal Bankruptcies	123.	122.	140.	152.	172.	141.	180.	166.	169.	183.	176.	204.

[1]Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 11: Construction

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. New Residential Dwelling Units	872.	689.	727.	1044.	1002.	685.	481.	935.	755.	426.	397.	670.
2. Value of Residential Dwellings Constructed (M$)	51.2	41.9	44.4	70.7	60.3	40.0	28.4	54.4	44.5	26.9	25.3	46.8
3. Value of Nonresidential Construction (M$)	63.1	35.2	37.9	54.4	48.2	59.9	11.5	30.6	26.9	79.0	31.7	75.8
4. Building Permits Issued in Selected Wyoming Cities	4295.	2803.	2762.	3586.	3701.	2138.	2025.	3892.	3546.	2438.	1713.	3315.
5. Value of Authorized Construction (T$)	101359.	34470.	37119.	46402.	68715.	51924.	29471.	42320.	36344.	35282.	23474.	83920.
6. Mortgage Interest Rate[1]	14.34	13.09	12.97	11.90	12.08	11.94	11.56	11.61	12.03	12.05	11.42	11.31

[1]Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 12: Consumers

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. New Truck Registrations	3024.	3230.	3233.	3415.	3417.	4363.	3927.	4418.	4102.	4574.	3581.	4052.
2. New Car Registrations	3506.	3610.	3272.	3539.	3671.	3483.	3083.	3741.	3676.	3397.	3012.	3752.
3. Wyoming Personal Income[1] (M$)	6217.	6123.	6069.	6061.	6128.	6265.	6273.	6374.	6556.	6604.	6661.	INA
4. US Disposable Income (B$)	2196.	2238.	2261.	2303.	2367.	2429.	2502.	2554.	2606.	2645.	2655.	2735.
5. US Personal Income[1] (M$)	2586519.	2629632.	2651672.	2705157.	2754010.	2827017.	2906532.	2970393.	3039942.	3082902.	3129096.	INA
6. Latest US Consumer[2] Price Index (1967=100)	292.8	292.0	293.0	297.2	300.8	301.5	303.3	306.2	312.1	312.2	315.3	318.7
7. Quarter's Average US CPI	292.3	292.9	292.5	296.1	299.5	301.4	303.1	305.2	310.0	312.1	313.9	317.7
8. Liquor Sales (T$)	8917.	10464.	7102.	7868.	8455.	9863.	6622.	7478.	8180.	9554.	6360.	7538.

[1]Revised series. Business Week, the previous source for monthly personal income for Wyoming and the U.S., has discontinued its series. Personal income data will subsequently be collected from the Bureau of Economic Analysis, U.S. Department of Commerce. Readers should be cautioned that the two series are not comparable.

[2]Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 13: Employment and Labor[1]

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. Civilian Labor Force	258974.	251909.	250258.	267248.	273592.	256902.	249794.	261676.	261271.	253243.	241636.	258670.
2. Employment	243798.	233790.	225488.	242087.	253149.	239275.	230633.	245871.	248480.	238710.	223271.	241601.
3. Unemployment	15177.	18120.	24770.	25161.	20443.	17627.	19160.	15805.	12791.	14533.	18366.	17069.
4. Unemployment Rate	5.9	7.2	9.9	9.4	7.5	6.9	7.7	6.0	4.9	5.7	7.6	6.6
5. Initial Claims Filed	10894.	14183.	15650.	10951.	8657.	11117.	10502.	7271.	5256.	8237.	13535.	8047.
6. Applications Received	15359.	13102.	12970.	11787.	12144.	9359.	10290.	11541.	11375.	9685.	11106.	12017.
7. New Non-Agricultural Openings	9190.	7035.	4724.	6185.	7992.	5528.	4679.	9779.	12905.	8655.	7004.	11450.
8. New Non-Agricultural Placements	8079.	5450.	4106.	6608.	10529.	6446.	5946.	9111.	10348.	8331.	6308.	9597.
9. Miners' Average Weekly Hours	39.7	38.1	39.9	39.5	41.8	41.2	42.8	43.0	43.5	43.7	42.4	43.9
10. Miners' Average Weekly Pay ($)	471.92	464.35	490.14	490.96	521.24	519.71	547.39	560.15	562.46	570.24	573.82	591.61
11. Miners' Average Hourly Wage ($)	11.90	12.18	12.27	12.43	12.47	12.60	12.78	13.03	12.94	13.05	13.55	13.48

[1]The most recent year's data are preliminary.
Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published quarterly.

Table 14: Energy and Mineral Production

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. Wyoming Coal (TST)	24257.	26054.	25400.	24746.	29784.	27401.	32020.	28964.	31806.	33619.	34566.	31608.
2. U.S. Coal (TST)	195253.	189307.	190260.	180439.	204117.	198085.	227129.	223657.	246163.	188116.	220595.	220203.
3. Wyoming Oil (TBPD)	324.	324.	321.	311.	325.	318.	311.	325.	323.	312.	325.	327.
4. U.S. Oil (TBPD)	8653.	8679.	8679.	8658.	8680.	8700.	8737.	8831.	8722.	8692.	8860.	8857.
5. Wyoming Natural Gas (MCFD)	1075.	1306.	1172.	1269.	1050.	1373.	1348.	1255.	1229.	1369.	1513.	INA
6. U.S. Natural Gas (MCFD)	48349.	48335.	47683.	43073.	44703.	48924.	52238.	48581.	47802.	49601.	51094.	INA

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas data are published monthly, and coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.

Table 15: Government

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. Sales and Use Tax Collections (T$)	65903.	61208.	56909.	46453.	53361.	55424.	55954.	51151.	57132.	59570.	54966.	50917.
2. Violent Crime[1]	411.	295.	301.	274.	409.	241.	221.	318.	350.	334.	304.	275.
3. Nonviolent Crime[2]	6346.	5093.	4802.	4821.	5319.	4219.	3728.	4486.	4790.	4170.	4170.	4969.
4. Stolen Property (T$)	3982.	2963.	3176.	2918.	3005.	2892.	2065.	2627.	2856.	2487.	2244.	2437.
5. Stolen Property Recovery Rate	42.8	42.8	46.5	36.9	40.3	46.1	42.7	42.9	51.5	45.5	51.9	38.5
6. Percent of Crimes Cleared[3]	20.1	21.3	22.8	21.8	24.2	23.5	30.9	22.4	22.9	30.7	28.3	24.0

[1] Murder, negligent homicide, forcible rape, robbery, aggravated assault.
[2] Burglary, larceny, auto theft.
[3] Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.
Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 16: Tourism

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
Visitors, National Parks and Monuments												
1. Yellowstone	1614242.	116082.	65368.	553986.	1653211.	133088.	63927.	536765.	1561475.	100802.	66776.	592059.
2. Grand Teton	2066704.	371007.	183675.	686326.	1462761.	238442.	136459.	522640.	1373523.	206891.	130583.	517614.
3. Devil's Tower	161989.	13232.	8912.	87506.	160953.	16894.	9037.	72461.	131447.	15145.	8841.	68885.
4. Fossil Butte	10303.	1601.	626.	5134.	9120.	4206.	246.	4246.	9107.	1762.	115.	4254.
5. Fort Laramie	51881.	6906.	4887.	28311.	56592.	7665.	2352.	27529.	54704.	5527.	2625.	26185.
6. Big Horn NRA-South[1]	53839.	30720.	13428.	44977.	56419.	29358.	18715.	45104.	67403.	26388.	31533.	56612.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	166170.	97892.	84187.	122665.	167385.	97696.	85780.	125371.	169579.	101625.	88135.	131520.
8. Hotel, Motel, and Camp Sales Tax (T$)	2226.	1323.	912.	1048.	2017.	1397.	979.	1084.	2178.	1389.	932.	574.[2]
9. Gasoline Sales (TGL)	108733.	81347.	71330.	81160.	107116.	79911.	63980.	85891.	102748.	77108.	66798.	83529.

[1] Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.
[2] Represents April and May data. Data for subsequent months will not be available until the beginning of 1986.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation monthly report.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 17: Utilities[1]

Calendar Quarters	3/82	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85
1. Residential Electric Connections	177081.	177968.	179111.	179717.	178762.	178535.	179967.	179536.	178837.	179123.	179451.	181034.
2. Residential Electric Consumption (TKWH)	302786.	391608.	489892.	392223.	294755.	395182.	562483.	437086.	359496.	484523.	542962.	395900.
3. Commercial Electric Connections	30841.	30388.	30772.	31194.	30533.	31404.	32340.	32462.	32874.	32738.	33058.	33730.
4. Commercial Electric Consumption (TKWH)	331351.	327961.	351633.	327565.	353743.	342219.	485953.	437983.	455181.	468378.	504376.	474481.
5. Industrial Electric Connections	3702.	3751.	3647.	3667.	3655.	3624.	3119.	3150.	3122.	3059.	2957.	2926.
6. Industrial Electric Consumption (TKWH)	1178792.	1225845.	1471528.	1388817.	1397176.	1016334.	1456749.	1911229.	2049121.	2479998.	1572877.	1904448.
7. Other Connections[2]	3243.	2857.	2819.	3059.	3164.	2791.	2759.	3155.	3438.	3165.	2916.	3145.
8. Other Consumption (TKWH)	70139.	12240.	6780.	8710.	46427.	13306.	6129.	13775.	50031.	10385.	5321.	19238.
9. Residential Natural Gas Connections	74861.	75955.	76567.	76449.	74638.	75037.	76263.	75081.	74802.	75736.	76112.	75456.
10. Residential Natural Gas Consumption (MCF)	872772.	2972244.	6531664.	8926691.	2871311.	8444801.	15230399.	8356402.	2804867.	9293855.	14912809.	6892581.
11. Commercial Natural Gas Connections[3]	6452.	6476.	6873.	6869.	6710.	6817.	6881.	6817.	6770.	6859.	6882.	6785.
12. Commercial Natural Gas Consumption (MCF)[3]	385052.	1196763.	3667569.	5716746.	1792146.	4865053.	9496853.	5231[illegible]96.	1656779.	5481602.	9319095.	4495896.
13. Industrial Natural Gas Connections	90.	95.	97.	97.	97.	98.	94.	95.	96.	93.	91.	92.
14. Industrial Natural Gas Consumption (MCF)	5564715.	7918440.	7626560.	10221456.	9291988.	13201149.	13193998.	25099377.	12505089.	26405131.	9633325.	34656928.
15. Other Natural Gas Connections[3]	409.	409.	48.	48.	46.	45.	45.	46.	46.	46.	46.	47.
16. Other Natural Gas Consumption (MCF)[3]	44697.	138389.	176.	322.	5323.	267.	235.	905.	5882.	336.	138.	1739.

[1]Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2]"Other" includes agriculture, municipal, and other public.

[3]Figures for the first and second quarter of 1983 reflect a change in the authority connections/consumption made by the Northern Utilities. Prior to January 1983, the company listed public authority under the category of other natural gas connections/consumption. Northern Gas now combines public authority connections/consumption with their commercial natural gas connections/consumption.

NOTE: Due to divestiture, Mountain Bell is no longer able to provide IPR with the telephones in service figure; because Mountain Bell accounts for the bulk of telephone mainline service in Wyoming, IPR has decided to discontinue the telephone data series.

Sources: Series 1-18: Reports to IPR by selected electric, natural gas, and telephone utility companies. Survey conducted monthly.

Wyoming Comparative Cost of Living Index* (July 10-12, 1985): Statewide Average = 100

City	Rank	All Items	Food	Housing	Transportation	Medical
Jackson	1	110.82	99.79	124.21	102.25	101.47
Evanston	2	110.34	94.71	129.49	105.22	99.84
Gillette	3	107.99	101.95	117.46	103.19	108.18
Kemmerer	4	106.32	99.70	117.45	99.12	100.61
Rock Springs	5	105.09	101.71	112.29	102.02	96.54
Pinedale	6	102.73	105.28	103.05	101.58	100.80
Casper	7	102.16	101.10	99.36	107.37	105.63
Cheyenne	8	101.70	98.60	104.36	102.72	98.55
Laramie	9	101.42	99.87	103.91	100.28	95.82
Sundance	10	99.39	104.59	100.24	94.19	102.01
Sheridan	11	98.92	102.67	94.69	100.65	97.96
Worland	12	98.55	99.46	94.80	98.79	104.12
Douglas	13	98.27	100.60	93.41	100.95	99.45
Newcastle	14	97.85	102.81	95.93	95.41	101.60
Thermopolis	15	97.83	100.11	94.59	97.95	96.94
Cody	16	97.52	104.89	92.27	98.74	99.62
Buffalo	17	96.61	99.38	90.76	97.00	98.73
Wheatland	18	96.00	97.32	90.54	100.17	99.47
Lusk	19	95.51	100.29	87.28	98.46	97.60
Riverton	20	95.28	96.11	92.04	99.11	104.37
Rawlins	21	94.60	95.38	93.16	99.97	93.69
Greybull	22	93.64	100.08	82.74	98.58	101.30
Torrington	23	91.81	93.40	86.06	97.61	95.67

*Apparel and Recreation Indices not shown.

Source: Wyoming Department of Administration and Fiscal Control.

Average Rents by City, Second Quarter 1985*

City	Average Apartment Rent	Average Trailer Lot Rent
Cheyenne	317.56	127.50
Buffalo	288.75	105.00
Casper	298.84	133.75
Cody	301.88	117.50
Douglas	303.92	117.50
Evanston	377.64	204.00
Gillette	376.28	117.50
Greybull	297.27	76.50
Jackson	364.62	101.67
Kemmerer	340.00	130.00
Laramie	356.07	125.00
Lusk	245.00	90.00
Newcastle	308.12	97.50
Pinedale	262.50	75.00
Rawlins	263.26	122.50
Riverton	304.81	111.00
Rock Springs	322.33	160.00
Sheridan	302.83	127.50
Sundance	242.50	80.00
Thermopolis	288.84	117.50
Torrington	272.22	57.50
Wheatland	252.50	100.00
Worland	298.13	141.33

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 3rd quarter of 1982, and end with the 2nd quarter of 1985. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Most annual data series will reappear in WQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronymn "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet

TKWH - Thousand Kilowatt Hours

$ - Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

T$ - Thousands of Dollars

H$ - Hundreds of Dollars

ST - Short Tons

TST - Thousands of Short Tons

MCFD - Million Cubic Feet Per Day

TBPD - Thousands of Barrels Per Day

GL - Gallons

TCF - Thousands of Cubic Feet

KWH - Kilowatt Hours

TGL - Thousands of Gallons

HBBL - Hundreds of Barrels

HMCF - Hundreds of MCF Per Day

HST - Hundreds of Short Tons

$/ST - Dollars Per Short Ton

RECENTLY PUBLISHED WYOMING RELATED RESEARCH REPORTS

A STUDY OF EMPLOYER PREFERRED SKILLS AMONG GRADUATING BUSINESS STUDENTS OF THE UNIVERSITY OF WYOMING by Gary Benson	No Charge
ANALYSIS OF THE LONG-TERM IMPACTS AND BENEFITS OF GRAND TETON NATIONAL PARK ON THE ECONOMY OF TETON COUNTY, WYOMING by John Merrifield and Shelby Gerking	$5.00*
ANALYZING PROPERTY TAX ASSESSMENTS IN WYOMING by Shelby Gerking, Gillian Arnott and Martha Schilling	$4.00*
CHANGING ENERGY PRICES AND ECONOMIC RENTS: THE CASE OF WESTERN COAL by John H. Mutti and William E. Morgan	No Charge
CHANGING FEDERAL-STATE RELATIONS IN WATER RESOURCE PLANNING: THE CASE OF WYOMING by R. McGregor Cawley and Charles Davis	No Charge
DISTRIBUTION OF MOUNTAIN LIONS IN WYOMING AS DETERMINED BY MAIL QUESTIONNAIRE by Richard L. Berg, Lyman L. McDonald and M. Dale Strickland	No Charge
EXPORTATION OF STATE AND LOCAL TAXES: A COMPARATIVE ANALYSIS by Shelby Gerking, William Morgan and John Mutti	$5.00*
FALLING WORLD OIL PRICES AND THE ROLE OF RAILROADS IN THE MARKET FOR WYOMING COAL by Scott E. Atkinson and Joe Kerkvliet	$5.00
SAMPLE SIZES AND CONFIDENCE INTERVALS FOR WILDLIFE POPULATION RATIOS by Ramond L. Czaplewski, Douglas M. Crowe and Lyman L. McDonald	No Charge
SHIFTING, INCIDENCE, AND INTER-STATE EXPORTATION OF PRODUCTION TAXES ON ENERGY RESOURCES by William E. Morgan and John H. Mutti	No Charge
TAX RATES, REVENUES, COAL SALES, AND THE STATE'S WELFARE: WYOMING VS. MONTANA by Scott E. Atkinson	No Charge
THE ECONOMIC IMPACT OF LARAMIE COMMUNITY COLLEGE ON THE ECONOMY OF LARAMIE, COUNTY, WYOMING by Scott E. Atkinson and Joe Kerkvliet	No Charge
THE EXPORTATION OF STATE AND LOCAL TAXES IN A MULTILATERAL FRAMEWORK: THE CASE OF HOUSEHOLD TYPE TAXES by John H. Mutti and William E. Morgan	No Charge
THE WYOMING ECONOMY: HISTORICAL TRENDS AND PROJECTIONS by Shelby Gerking and John Merrifield	No Charge
TRANSPORTATION CHARGES, PRODUCTION TAXES, AND SCRUBBER LEGISLATION: CONSEQUENCES FOR THE WYOMING COAL MARKETS by Scott Atkinson, Joe Kerkvliet, and Paulette Barclay	$2.00*
WYOMING'S NEAR-TERM ECONOMIC OUTLOOK: MODEST GROWTH FOR THE 1980'S by Shelby Gerking, S.T. Mast, Scott Atkinson	$2.00*

*Prices reflect reproduction costs only. In state subject to 3% sales tax.

HOW TO ORDER

Please mail your order together with payment (if necessary) to:

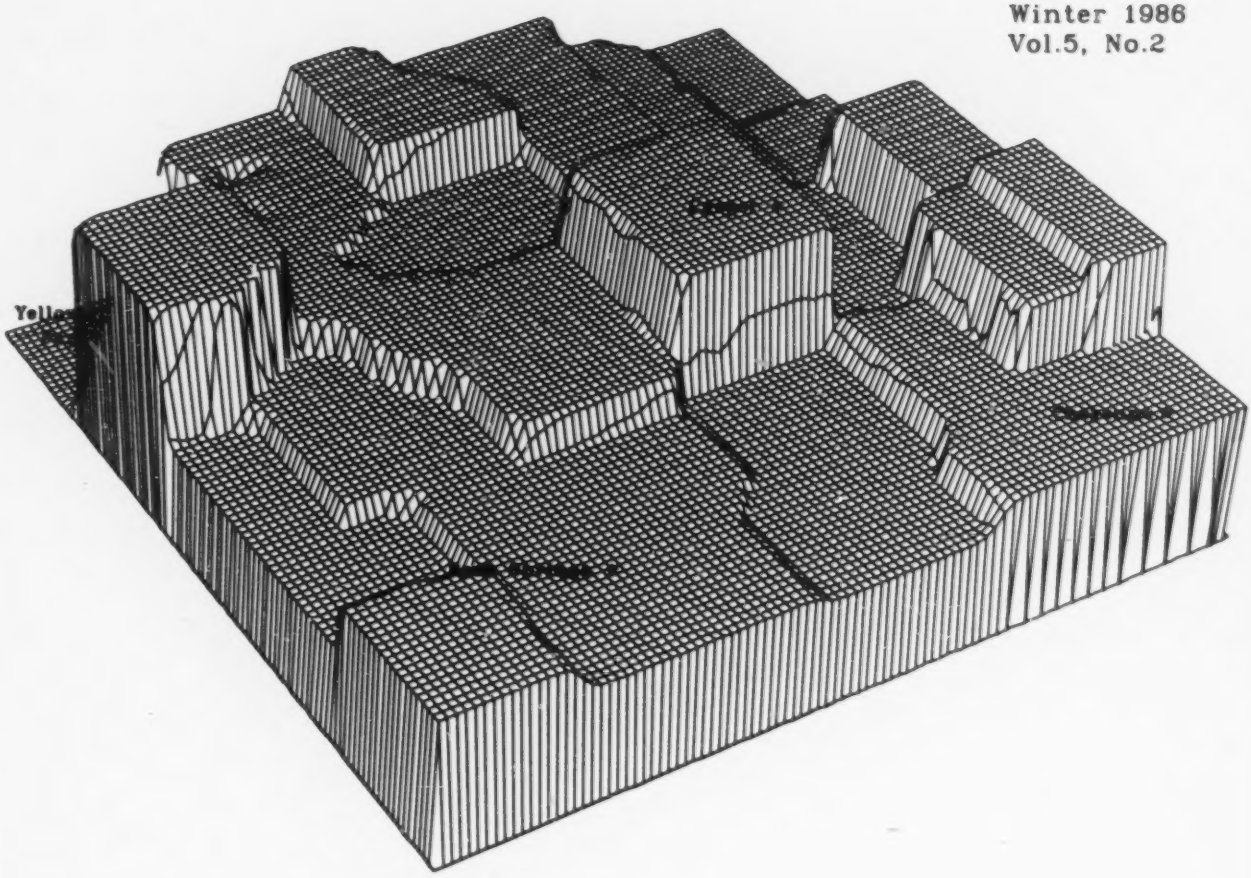
INSTITUTE FOR POLICY RESEARCH
Box 3925, University Station
Laramie, WY 82071
ATTN: Administrative Secretary

Thank You

3/25/86
49350-2

WYOMING QUARTERLY UPDATE

Winter 1986
Vol.5, No.2



IPR

1983 Trade Sector Earnings by County
(Percentage of County Total Earnings)

Wyoming Quarterly Update

Wyoming Quarterly Update (WQU) represents the efforts of the Institute for Policy Research (IPR) at the University of Wyoming to provide improved data access services. The data presented in WQU are assembled from secondary sources, such as government agencies and private industry. The staff of IPR greatly appreciates the ongoing, cheerful cooperation of each of the data sources listed in the bibliography.

WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously. Featured for the seventh time in this edition is an industry profile. In this edition, a discussion of Wyoming's trade sector is presented.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting earnings generated by the trade sector as a percentage of total county earnings.

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

For additional information, contact WQU editor S.T. Mast at:

The Institute for Policy Research
University Station, Box 3925
Laramie, WY 82071
(307) 766-5141

OTHER IPR SERVICES AND RESEARCH REPORTS ARE LISTED AT THE END OF THIS WQU.

INSTITUTE FOR POLICY RESEARCH
OFFICE OF RESEARCH AND GRADUATE STUDIES
UNIVERSITY OF WYOMING

FRONT MATTER
Introduction....i
Table of Contents....ii

WYOMING SCENE
Overview and Perspective....2
Minerals Outlook....4
Agricultural Outlook....11
Job Openings Outlook....12
Coincident Indicators Index....13

INDUSTRY PROFILE
Trade Sector....16
Interview....25
SBA....27
Business Survey....29
Personal Income Index....31

ECONOMIC CHANGES
Discussion....34

WYOMING DATA
Agriculture....36
Banking and Finance....37
Business Conditions....38
Construction....39
Consumers....40
Employment and Labor....41
Energy and Mineral Production....42
Government....43
Tourism....44
Utilities....45
Wyoming Cost of Living Index....46
Rent by City....47
Format Description....48
Publications List....49
CRIS Information....50

Editor....S.T. Mast
Editorial Advisors....G. Fred Doll
Scott E. Atkinson
Word Processing....Tracy Moore
Editorial Assistance....Claoma Woodall
Business Coordinator....Patsy Parrott
Research Aide....Ruth Tebbutt
Graphics....Cathy Ryan
UW Graphic Arts Services
Computer Graphics Package

Wyoming Quarterly Update is published four times per year in fall, winter, spring, and summer editions.

The articles appearing in this publication represent the opinions of the authors and do not necessarily reflect the views of the state of Wyoming or the University of Wyoming or their respective executive officers. Duplication or quotation of material in this publication is welcomed, but it is requested that WQU, the Institute of Policy Research, University of Wyoming, be credited.

WYOMING SCENE

Overview and Perspective

The national economy ended the old year and ushered in the new amid signs of rejuvenation. National employment, consumer spending, and factory outputs all ended the year on a brighter note.

The economy had been on a faster track since last fall, as consumption continued to rise. This performance was capped by the holiday season, when retail sales picked up at a strong pace. Retail sales increased by 1.9 percent in December, according to the Commerce Department, the strongest gain in three months. Both softgoods and hardgoods showed solid increases. Softgoods sales rose at an annual rate of 4.7 percent. Hardgoods were led by a 5.7 percent jump in auto sales, helped along by new incentive packages offered by General Motors and Ford. Sales of domestic autos rose at an annual rate of 8.1 million during December, while sales of foreign cars rose at an annual rate of 3.4 million.

Employment gains during the fourth quarter were their most sweeping in a year and a half. Sixty-five percent of the 185 industries surveyed by the government in December showed gains in employment. For the first time in recent months, the gains were not confined to service industries, but extended to factory employment as well. Factory employment increased 45,000 in December, with the increases occurring in both the hardgoods and the softgoods sectors. Factories had lost 324,000 jobs during the first nine months of 1985, but recouped about half that loss during the fourth quarter.

Employment in the service industries, the employment bright spot throughout much of 1985, continued to increase. In December, 260,000 jobs were added to service industry payrolls.

Along with the employment gains came a decrease in the unemployment rate, to a level below 7 percent for the first time in nearly six years. The number of people listed as unemployed dropped 138,000 in December, driving the civilian jobless rate down to 6.9 percent. At the same time, total employment reached an all-time high of 108.2 million in December, according to the Labor Department. December's unemployment rate was at its lowest level since April 1980, when it was 6.9 percent and rising due to a recession. Even better news may yet lie ahead. Some economists have predicted the rate could fall to as low as 6.5 percent if the current annual rate of economic growth increases to 4 percent.

Average weekly earnings and the factory workweek also increased during December. Average weekly earnings jumped 1.2 percent, the largest gain in 20 months, while the factory workweek climbed from 40.7 hours in November to 41 hours in December. It was the longest workweek reported since April of 1984.

The upsurge in activity was also recorded in manufacturers' sales, which rose throughout the fourth quarter, after remaining relatively flat through the first three quarters of 1985. Shipments of manufacturers rose $3 billion in October and $3.1 billion in November, to $200.4 billion on a seasonally adjusted basis.

Inflation remained relatively placid, despite outward signs to the contrary. The Consumer Price Index rose 0.9 percent in October, 0.8 percent in November, and 0.4 percent in December, or to an annualized rate of nearly 9 percent for the fourth quarter. However, a one-time increase in car prices during October and price increases in the volatile food and energy categories accounted

for nearly all of the increases. During 1985, retail prices rose 3.8 percent, according to the government, finishing under the 4-percent mark for the fourth consecutive year.

At the same time, wholesale prices crept up only 1.8 percent, according to the Labor Department. Wholesale prices climbed 0.4 percent in December, down from 0.8 percent the month before. Food prices rose 0.3 percent in 1985, after rising 3.5 percent in 1984. A major portion of the year's wholesale food price increase was attributed to an overall 12.3 percent increase in the cost of vegetables and a fall surge in beef prices. Wholesale gasoline prices, on the other hand, climbed 3 percent for the year. However, oil industry analysts expected falling crude oil prices to show up in significantly lower fuel costs in the months ahead.

Despite a strong finish, the national economy grew by a lackluster 2.4 percent during 1985, the slowest growth rate since the last recession. And while the economy did pick up steam during the final quarter, many economists were predicting only a slightly improved economy during 1986.

In its latest survey of 300 members, the National Association of Business Economists found those surveyed believed the economy should grow at a modest pace through 1986. However, 85 percent of those responding said they felt the country will be in another recession by the end of 1987. Regarding the Gramm-Rudman-Hollings amendment, designed to shrink the ballooning federal deficit to zero by 1991, 59 percent of those surveyed said they did not think the measure would have its desired effect.

In Wyoming, the sharp decline in oil prices has been a matter of more than passing concern in recent weeks since the bulk of the state's assessed valuation is tied to minerals. In 1985, according to the 1985 Wyoming Mineral Yearbook, the state's total valuation was $8.4 billion, of which $4.98 billion, or 71 percent, was related to minerals. The largest mineral segments were oil (38 percent), gas (18 percent), and coal (15 percent).

Since tax collections are related to oil unit-values, the state loses revenue as unit-values drop. Both severance taxes and ad valorem taxes are affected. By mid-January, the price of West Texas Intermediate, the major domestic grade, had dropped to near $20 per barrel. This was down from $31.70 in late November.

The drop in price resulted from oversupply conditions in world oil markets. Coupled to this was OPEC's determination not to see its share of the world market erode any further. On December 9, OPEC signaled that it would not try to hold prices, but instead would try to recapture some of its lost market share. OPEC's sales have dropped by half over the past seven years, due largely to stiff competition from Britain, Norway, and Mexico. OPEC could be gearing up to produce 17.5 million barrels per day this year, in a world that probably needs only 16 million barrels per day or less from the cartel.

Some Wyoming banks have fallen on hard times recently. In January, the State Examiner indicated that another three banks would almost certainly close their doors before the end of the year, and a fourth would probably follow suit without large infusions of capital. Shortly thereafter, the American Bank of Casper failed. Most of American's deposits were transferred to another bank, along with some loans.

S.T. MAST, IPR

# #

Winter Minerals Outlook

OVERVIEW

With the end of 1985, there is some bad news and some good news relative to minerals in Wyoming. Although the prices for oil and natural gas have fallen substantially, oil production has rebounded slightly, and our forecast of 125 million barrels may be exceeded. Gas production, however, is going to be below earlier expectations. Coal production is doing even better than forecast in September. Although no final numbers are available, it now looks like production from Wyoming's coal mines might exceed 145 million tons and register a 10 to 11 percent gain over last year's record 130.7 million tons. Spot sales of coal still dominate this boost in production. In regard to coal prices, recent spot sales from the Powder River Coal Basin have been as low as $4.98 and $4.50 per ton (FOB mine), respectively.

Production of Wyoming's other major minerals (uranium, trona, and bentonite) is tracking our September forecasts.

The greatest concern, however, is in regard to oil and gas drilling activity. As expected, drilling for natural gas has not improved, but more importantly, the traditional year-end increase in oil and gas drilling has apparently not materialized in 1985. Evidently, reduced drilling budgets have been substantial enough that budgets were depleted before the end of the year, and there has been no need to significantly increase drilling activity to work off surplus budgets.

The concern over this latter item is obvious. Without this late year boost in drilling, the state's drilling activity was only slightly above 1984's level. This ultimately translates into declining reserves since it takes drilling to find oil and gas, and the lead-time in converting new discoveries into reserves makes a rapid reversal of this trend unlikely. Pending federal legislation still hanging over the petroleum industry, the continuing gas glut, and questions about the long-term stability of oil prices are all working to tone activity down, and unfortunately, hold it down, at least in the near term. In this regard, Amoco Corporation recently announced that its 1986 exploration budget will be about $170 million less than its 1985 budget -- a somewhat ominous sign of slow times. This budget does include eight to 10 exploratory wells in Wyoming.

A discussion of the potential effects of recent OPEC activities is included in the oil and gas section of this update. The bottom line is that although the price may drop below $20 per barrel, any effects on production will probably not be seen until the late 1980s. Declines in production at that time will hinge on the duration of low prices.

This update of minerals activity also reflects the cessation of metals exploration as winter closes off access to most of the state's metalliferous areas. The growing demand for Wyoming's by-product sulfur, however, is another bright spot and is highlighted in the section on uranium and industrial minerals.

Gary B. Glass, State Geologist,
Geological Survey of Wyoming

METALS AND PRECIOUS MINERALS UPDATE

According to the October issue of PAY DIRT, AMAX Incorporated has placed its Kirwin property on the selling block. The Kirwin property lies southwest of Meeteetse, Wyoming, in the southern Absaroka plateau. Kirwin is one of the several untapped porphyry copper-molybdenum deposits found in northwestern Wyoming. In 1979, the U.S. Bureau of Mines estimated that the Kirwin area contained a resource of at least 70 million short tons of 0.75 percent copper. PAY DIRT reported the porphyry could yield 615,000 tons of copper, 13,500 pounds of molybdenum, 121,000 ounces of gold, and 5.6 million ounces of silver.

At one point, AMAX had planned to operate a large open pit mine at Kirwin, beginning in 1980. But with the decline in copper and molybdenum prices, AMAX's plans were canceled. More information about the area is available in papers by Wilson (1964) and Hausel (1982).

The Dow-Jones News Service earlier this year reported that Lac Minerals Ltd., which is operating in the Colorado-Wyoming State Line diamond district, is offering 500 carats of diamonds for sale. The diamonds were extracted from one 3,000-ton bulk sample of kimberlite from the Colorado side of the State Line District. This is equivalent to a grade of 0.17 carat per ton. Average kimberlite ore, worldwide, runs about 0.25 carat per ton.

The Geological Survey of Wyoming is continuing its kimberlite exploration project in Wyoming. Sample concentrates from stream sediments collected from the Laramie Range during this past field season are being processed for kimberlitic indicator minerals. During the past field season, sampling was confined to the Pole Mountain area and the Elmers Rock greenstone belt in the central Laramie Range.

The project area has also been expanded to the Green River Basin to test lamproite from diamond in the Leucite Hills area, and to search for the origin of pyrope garnet and chrome diopside found in anthills near Cedar Mountain. The Cedar Mountain anomaly is located south of Granger, and nearly 50 miles southwest of the Leucite Hills.

The Metallic and Precious Minerals Section of the Geological Survey is cataloging reports and maps on gold deposits at South Pass and is updating maps of this greenstone belt area.

Three reports on this area have been completed. The reports (Hausel, 1985, 1986a, and 1986b) were submitted for publication and are general overviews on the geology and gold mineralization of South Pass.

These reports describe South Pass as a fragmented greenstone terrain with at least four mappable units. The lowermost unit is an ultramafic to mafic metavolcanic layer. This lowermost unit is overlain by a quartzite-metapelite-iron formation layer that is overlain by a metatholeiitic unit. The metavolcanic unit is in fault contact and overlain by a thick succession of metagreywackes with lesser calcalkaline metavolcanics. Rocks of this youngest Precambrian supracrustal group are dated at about 2.8 billion years old, which may be a metamorphic date.

Mapping from the past field season is still being compiled, thin sections are being analyzed, and the results of several assays and analyses of whole rock samples will soon be available. In addition to the work completed on three 7½-minute quandrangles, 19 mine maps of historic gold mines have been completed. One mine, the Snowbird, is quite unique.

The Snowbird Mine, in the South Pass-Atlantic City District, was developed on a 40 feet to 50 feet wide carbonated and silicified stratabound zone hosted by metavolcanics. The zone contains massive sulfides (pyrite and minor chalcopyrite). A model lead age date from the ore body reported by Bayley and others (1973) was 1.75 billion years. One sample of a calcite-rich quartz vein, collected at the surface by Prinz (1974), assayed 4.5 ppm gold.

W. Dan Hausel, Deputy Director,
Geological Survey of Wyoming

OIL AND GAS UPDATE

There is much speculation on the effects of recent OPEC activities, particularly those of Saudi Arabia. Saudi Arabia is the only major OPEC country currently holding back oil production in an attempt to maintain price levels. If they substantially increase production, the price will fall. For Wyoming, the price may stabilize as low as $22 a barrel by 1987, although this decline in price will probably be gradual. The average price of Wyoming crude should not go below $23 a barrel in 1986 because lowered prices will not affect the entire calendar year. For comparison, the average price in 1984 (excluding stripper production which is about $2.00 per barrel higher) was $26.56 and has been forecast at $24.68 in 1985.

Companies in Wyoming are not likely to shut-in oil wells due to this reduction in price. So, in effect, production from existing wells will not be seriously affected. However, a reduction in price to the $22 to $23 level will have a negative effect on exploration. If price reductions persist, production could decline rather substantially in the late 1980s.

Because of the need for cash flow, production from stripper wells should at least hold steady. Enhanced oil recovery (EOR) projects, on the other hand, may be affected by low prices. Instead of initiating new EOR projects, companies may hold off a few years waiting for prices to go back up. On-going or planned projects by many of the major oil companies i.e., Amoco's Lost Soldier/Wertz carbon dioxide flood, will probably continue on schedule. The overall effect of postponing EOR projects will be reduced production, especially toward the end of the 1980s.

According to a recent study by the Interstate Oil Compact Commission (IOCC), enhanced oil recovery (EOR) methods have the potential for generating an additional $500 million in state taxes for Wyoming over the next several years. An estimated 400 million barrels of additional oil could be realized using currently feasible EOR techniques. This IOCC project began last spring, and recently all oil-producing states were invited to participate. The study will be conducted by Lewin and Associates Inc. It will build upon data already available form the National Petroleum Council, incorporating production data from each participating state.

In a report released by the Interstate Oil Compact Commission, the role of stripper wells (wells only capable of producing 10 or less barrels of oil per day) in the United States' oil production was profiled. In 1984 stripper wells produced 463,459,000 barrels of oil, a 1.4 million barrel increase over 1983 and roughly 15 percent of the nation's total production. Strippers in 1984 averaged less than three barrels per day, compared to the national average of 14 barrels per day. However, it was also noted that over 14,000 of these wells were abandoned during the year due to the fact that production in many wells had dropped to such a small amount that taxes, royalties, and operating expenses could not be covered. In the case of Wyoming in 1984, 5,020 stripper wells produced 7,118,844 barrels of oil. Average production was 3.87 barrels per day. Wyoming's stripper well reserves were estimated at 170,500,000 barrels. Production trends for Wyoming stripper wells are shown in the table below:

Stripper Well Production in Wyoming

Year	Number of Stripper Wells	Production
1981	3,349	5,366,854
1982	4,792	6,354,517
1983	5,020	6,944,013
1984	5,020	7,118,844

Source: National Stripper Well Survey, IOCC, 1985.

Most notably, the number of stripper wells in Wyoming did not increase from the number in 1984. Soft oil demand and increased operator costs probably account for this plateau in well count.

The U.S. Department of Energy recently published its 1984 year-end reserve estimates for the United States and the individual oil and gas producing states (U.S. Energy Information Agency, 1985). For the first time in 14 years, the proved reserves of crude oil in the United States increased, roughly 2.6 percent, to 28.4 billion barrels. Natural gas reserves declined 1.4 percent, to 197.5 trillion cubic feet.

Reserve figures for Wyoming increased for

gas and decreased slightly for oil according to the report. Wyoming was credited with 954 million barrels of oil at year-end 1984, as compared to 957 million barrels at year-end 1983. This represents the fifth highest oil reserve among producing states. The total for gas reserves increased to 10.58 trillion cubic feet from the 1983 year-end total of 10.23 trillion, which makes Wyoming's reserves the seventh highest among producing states and 41.9 percent of the Rocky Mountain region's reserves.

The U.S. Bureau of Land Management's lease sale held October 30 drew high bids totaling $1,876,104.84 for 32,052 acres. Only 105 tracts out of a total of 208 received bids. The average bid per acre was $58.53 (Petroleum Information Corporation, Rocky Mountain Region Report, 11-6-85, p. 13-14). Exxon Corporation's bid of $1,108.77 on Tract #206 was the highest bid offered. This 520-acre lease in the southwestern part of the state, 2.5 miles west of Luckey Ditch Field, already produces gas from the Dakota.

On a related note, the Wyoming Board of Land Commissioner's lease sale was held November 19 and drew $494,738.55 in high bids, an average of $11.95 an acre for leases on 41,399 acres. The high-bid parcel was Tract #1165 near Gillette in the Powder River Basin. Gary Brown of Casper bid $320.00 per acre for the 7.8-acre tract.

News continues to center around Exxon's Shute Creek gas processing plant. There are currently 6,500 workers working on the $2.2-billion first phase of the project, and company officials indicate there could be 7,200 workers by year-end. Exxon plans to transport carbon dioxide from this large plant to enhanced oil recovery projects in Colorado, Wyoming, and North Dakota. Recently ranchers in the Powder River Basin expressed concern over the proposed pipeline, which would cross through the Powder River Basin to the Williston Basin in North Dakota. They feel problems dealing with the control of noxious weeds on the right-of-way after construction, the depth of burial of the line, the right-of-way width, and Exxon's initial contract with landowners need to be dealt with. Exxon states that they are currently in a negotiating stage, and all rancher concerns will be considered.

During the past five years, there have been many closures of small refineries in the Wyoming and Rocky Mountain area, reducing operating capacity in Wyoming by 25.7 percent. This trend is emphasized in the following table, and there are indications that the trend may continue into the near future:

Number and Capacity of Wyoming Refineries, 1981-1985

	Number of Operating Refineries			Capacity (barrels per calendar year)	
	Total	Operating	Idle	Operating	Idle
1981	14	14	0	231,580	0
1982	12	10	2	209,555	20,185
1983	7	6	1	168,055	1,500
1984	6	5	1	166,855	200
1985	6	6	0	172,005	0

Source: Basic Petroleum Data Book, American Petroleum Institute, Volume II-V.

Mitchell Energy and Development Corporation recently announced plans to initiate a pilot waterflood in Mikes Draw Field in the Powder River Basin. The Teapot sand member of the Mesaverde Formation will be waterflooded in a 400-acre pilot project, beginning next year. This initial attempt will cost $4 million. If successful, the project will be expanded to include all of the 7,400-acre unit in the field at a cost of $28 million. Potential secondary recovery is estimated at 5.5 million to 9 million barrels of 44° API gravity oil. Injection water will come from the Fox Hills Sandstone at about 5,800 feet (Oil and Gas Journal, November 11, 1985, p. 41-42).

As a result of Monsanto's deep Madison discovery in the Madden Field area, other companies are beginning to look at similar plays in the area. Monsanto recently staked an offset well to the discovery, and W.A. Moncrief, Jr. announced plans to deepen a dry hole nine miles northeast of Bonneville on the same general trend. Moncrief plans to drill to 23,000 feet and test the Madison.

Mountain-front overthrust areas are still in the news with Champlin recently announcing plans to drill a well to 12,000 feet in the Medicine Bow Mountains seven miles southwest of McFadden. The well will spud in Precambrian and is targeted for sediments in the footwall of the reverse fault.

To help trim the deficit, the Reagan Administration is reportedly considering selling the Teapot Dome oil field in Wyoming. The field, which is part of the Naval Petroleum Reserves, currently produces about 3,000 barrels of oil per day. The U.S. Department of Energy, however, would not confirm the sale was being considered.

The Wyoming Board of Equalization adopted rules in early October to govern the 2 percent severance tax exemption on tertiary recovery projects for oil. The rules and exemption only apply to projects certified by the Oil and Gas Conservation Commission after July 1, 1985, and before July 1, 1990. Industry spokesmen had requested some wording changes in the rules. They successfully argued for the deletion of the clause disallowing the exemption for interrupted tertiary projects since many tertiary projects are cyclical due to the process used and interruptions are necessary. The new rules went into effect before the end of the year.

Concerning the Buck Draw Field controversy, the Wyoming Oil and Gas Conservation Commission ordered operators in the north portion of the field to shut-in production and begin working on a plan for secondary or tertiary enhanced recovery. The wells in the north portion of the field were shut-in beginning October 11. The commission's order, however, has been appealed in District Court.

Alan J. VerPloeg, Petroleum Geologist
Geological Survey of Wyoming

URANIUM AND INDUSTRIAL MINERALS UPDATE

Uranium

During the fourth quarter of 1985, uranium continued to be produced in Wyoming at two locations. Bear Creek Uranium produced uranium

oxide from its Bear Creek Mine north of Douglas through December, after which production ceased. Pathfinder Mines, owned by the French Company, COGEMA, is producing uranium oxide from its Shirley Basin Mine north of Medicine Bow. The COGEMA-Pathfinder's Lucky Mc mill and mine in the Gas Hills east of Riverton remains closed due to construction and expansion at the mill. This operation is scheduled to restart in mid-1986.

Bear Creek's production is sold to a Southern California utility (Mono Power) under a contract that terminates at the end of 1985. Production from Pathfinder-COGEMA goes to Japan, where it is enriched to 3 percent U_{235} for French nuclear power plants (natural uranium is about 0.7 percent U_{235}, the fissionable isotope). In 1986, all new Wyoming production will be exported.

There are no encouraging signs for increased uranium production in the United States and Wyoming. Although utilities are lowering their stocks of uranium, no new contracts have been let, and it still remains to be seen whether new contracts are made with domestic or foreign producers. During the past quarter, the spot price rose from $15.75 per pound of uranium oxide to $16.50 per pound. This is significantly down from the 1979 high of $42.00 per pound.

All indicators of uranium activity recently reported by the U.S. Energy Information Agency show declines from 1983 to 1984 (U.S. Energy Information Administration, 1985). These include exploration and development expenditures, total production, numbers of companies involved in exploration, drilling footage, and employment. Employment in the U.S. uranium industry has declined from a high of 21,951 man-years in 1979 to 3,597 man-years in 1984, a reduction of 84 percent. Also in 1984, domestic production of U_3O_8 from stockpiled ore was greater than production from mined ore for the first time in history.

It is unlikely that the domestic uranium industry will recover at any time in this century. Wyoming's production will probably decline to production from COGEMA-Pathfinder's Lucky Mc operation only. (An interesting fact; the Lucky Mc was the first large mine in Wyoming, with production beginning in February, 1958 -- now it will probably be the only mine to survive into the 1990s).

At the national level, the uranium industry was deemed "not a viable industry" in 1984, according to an awaited determination recently made by the U.S. Department of Energy (DOE). The Atomic Energy Act requires the Secretary of Energy to make an annual determination of the industry's viability. Along with the determination, the Secretary of Energy, John Herrington, offered three steps to aid the industry. These steps included offering low-cost enrichment services to customers purchasing 100 percent of their fuel from DOE, not selling from U.S. Government-owned uranium stockpiles, and commencement of a three-month study of foreign uranium imports into the United States.

In a related item, a trade organization representing U.S. uranium producers [Uranium Producers of America (UPA)] have filed an amicus brief in a pending lawsuit against DOE. The suit seeks an immediate ban on DOE's enrichment of foreign uranium for use in this country. Similar restrictions existed in 1977, but they had been gradually phased out since 1977. The suit alleges this is a significant factor in the current "nonviable status" of the domestic uranium industry. UPA has no problem with DOE's enrichment of uranium for foreign producers when the enriched product will be returned to the producer's country.

In November, the Wyoming Land Quality Advisory Board tabled action on a proposed rule that would allow active mines to delay some reclamation. The rule, if adopted, would allow deferral of reclamation of up to 20 percent of the land in a mining permit for up to five years. This could be done without a formal mining permit revision, and it would apply to all commodities, including uranium mines. Another hearing was set for December 12 to get more public comment. This action by the advisory board comes after Governor Herschler's veto of a bill in the last legislative session. That bill had similar provisions, but was vetoed because Governor Herschler felt the current laws could address the problem.

Bentonite

Bentonite production has remained relatively steady in 1985, but at low prices. There has been no resurgence in demand for bentonite for the main uses in taconite pelletizing, foundry castings, or especially, well drilling mud. This trend is expected to continue into 1986. Production should remain at low levels with no increase or decrease of note. There has, however, been an increase in the use of specialty bentonite -- that used in soaps, medicines, cosmetics, etc.

In addition to the major bentonite producers, two companies, Milwhite, Inc., and Southern Clay Products, process raw ore from Dresser-Magcobar (Greybull) and Kaycee Bentonite Partnership, respectively, for the high quality specialty bentonite used in ceramics and medicine. This production only accounted for 0.57 percent of Wyoming bentonite in 1984.

For the long term, bentonite production should increase. Growth in demand should increase prices, bringing an upturn to an industry coping with the current low demand and resultant low prices.

Trona

Trona, whose 1985 production is only slightly above 1984 levels, faces a promising future if Wyoming producers of soda ash (refined trona) can increase exports. Domestic consumption of soda ash, mainly for glass production, water softeners, chemicals, and paper whiteners, is expected to remain fairly stable. Currently, Wyoming accounts for 90 percent of the nation's soda ash production.

Worldwide demand, however, is growing at an annual rate of from 6 percent to 16 percent. The Asian market represents the best opportunity since European and other developed countries have domestic synthetic soda ash plants protected by high tariffs on imported soda ash. Mainland China, for example, represents a possible 2.5-million-ton market by 1990,

according to Bruce C. Baker, trona marketing officer for Tenneco. This represents about 25 percent of the total present Wyoming production, and the increase, if it occurs, can be met by the present production capacity of Wyoming plants, now operating at 70 percent capacity.

Other Industrial Minerals

The 1985 production of gypsum for wallboard and cement, which declines seasonally, should surpass 1984's production.

The production of clay used to make bricks near Evanston is increasing, and clay was dug near Laramie for the construction of a diversion berm along the Laramie River adjacent to a chemical-waste dump site. This operation closed following the completion of the diversion.

The production of limestone for use in sugar production in Wyoming has ceased. Holly Sugar now ships only small amounts of high-calcium limestone from the Lost Day Quarry north of Fort Laramie to the Laramie River Power Station near Wheatland for use in stack scrubbers. Holly Sugar is using limestone from South Dakota in the Torrington and western Nebraska sugar refineries. Great Western Sugar, which is in receivership, has closed the L Bar F Quarry west of Cheyenne.

Near the end of the year, Monolith Portland Cement Company announced the closure of its cement plant and limestone quarry at Laramie. Citing slack demand as the reason, it was hoped the plant could be reactivated in the not too distant future. Since its closure, Centex has bought the plant and is planning to expand its capacity prior to its reopening.

The use of limestone aggregate for highway construction is increasing, however, and several construction projects are currently crushing limestone for this use. The supplies of gravel in certain areas of the state, particularly Cheyenne and Casper, are being depleted both by production and by being covered by houses and buildings. Crushed stone brought in from outside is an alternative to local sources of aggregate.

Railroad production of ballast, which declined in early 1985 as new construction projects were completed, is increasing again as existing lines are repaired or upgraded. The Union Pacific Railroad continues large-scale production of granitic gneiss for ballast west of Cheyenne. The Union Pacific is also using spent shale (from the production of phosphate at Leefe, west of Kemmerer) as ballast in western Wyoming and on certain light-duty spurs, including the Coalmont Branch west of Laramie to North Park, Colorado.

Both the Burlington Northern, and the Chicago and North Western railroads are looking for local sources of ballast. Both railroads are examining quartzite in the Hartville uplift in Platte and Niobrara counties. The Burlington Northern took a bulk sample of quartzite from the Sunrise area for testing in November.

Sulfur

Wyoming's natural gas plants have a design capacity of 2,625 short tons per day of elemental sulfur. Nine hundred eighty-five short tons of this capacity come from Chevron's Carter Creek Plant. The largest capacity plant is Amoco's Uinta County natural gas plant -- 1,309 short tons per day. The remaining capacity is from Amoco's plants, south of Riverton, and south of Cody, the Colorado Interstate Gas Company's plant at Rock Springs, the Husky Oil Company's plant at Cheyenne, and the Sinclair Oil Company's Sinclair Refinery.

In addition to these by-product sulfur sources, natural sulfur deposits are found in northwestern Wyoming. These formed from hot-spring systems. Sulfur-bearing hot water deposited native sulfur or pyrite in open spaces and as replacement bodies as the water cooled. Large deposits are found along the western margin of Star Valley near Auburn, along the Shoshone River immediately west of Cody, and on Cedar Ridge three miles west of Thermopolis.

The Thermopolis deposits occur as sulfur pods and irregular lenses, several inches to over 100 feet in length. These lenses are replacement masses in limestones of the Dinwoody (Triassic) and Phosphoria (Permian) Formations. A small amount of sulfur was produced from this property before 1923. Reserves are estimated to be large (Majors, 1946).

Since the sulfur occurs in a phosphatic limestone, it is possible to mine the sulfur and phosphatic lime together to produce a ready-mixed fertilizer. Recent inquiries regarding this property and shipping costs for the material indicate that there is a potential for reopening this area to mining in the future.

These and other natural sulfur occurrences in Wyoming may increase in mining potential as demand for sulfur increases.

Elemental sulfur is generally converted to sulfuric acid before its use. Sulfur is used for fertilizer (65 percent), chemical products used by various industries (10 percent), petroleum refining (7 percent), and metal mining and milling processes (3 percent). The remaining 15 percent is used in a wide variety of industrial products, including rubber and plastic products (Morse, 1985).

The 1984 consumption of sulfur in the United States was 12,400,000 tons. Imports account for about 20 percent of consumption. Most of the imported sulfur comes from Canada (64 percent) and Mexico (36 percent) (Morse, 1985). In the third quarter of 1985, sulfur consumption in the United States was increasing at a rate of about 10 percent per year (U.S. Bureau of Mines data), which is somewhat below the 20 percent per year increases reported in 1983 and 1984.

The price of sulfur increased from $130.41 per ton in 1983 to about $180.00 per ton in 1984 (Morse, 1985) and may increase about $20.00 per ton in 1985.

Ray E. Harris, Uranium and Industrial Minerals Geologist, Geological Survey of Wyoming

COAL UPDATE

Based on reported coal deliveries (Glass, and others, 1985), it appears that Wyoming's coal production will set another record in 1985. Deliveries through August 1985 were over

12 million tons ahead of 1984 deliveries for the same period. If the trend continues for the remainder of 1985, the state's production could exceed 145 million tons, somewhat more than predicted in September of 1985. Preliminary data from the U.S. Energy Information Administration indicate that Wyoming's cumulative monthly coal production through most of 1985 was from 4 million to 6 million tons greater than West Virginia's production. It is possible that by the end of 1985, Wyoming may move into second place in coal production in the United States, ahead of West Virginia for the first time.

Additional data on Wyoming's 1984 coal production have recently become available. Although production on state and federal leases increased slightly from 1983 to 1984, the production from privately-owned (fee) coal increased nearly 62 percent over the same period and now accounts for about one-third of the entire state's production. Coal on state leases was valued at about $344 million and accounted for nearly $15 million in royalties for the state. Coal from federal leases in Wyoming was valued at nearly $846 million, with an average value of $12.15/ton; the total value of the coal increased about 7 percent over 1983's $787 million, and the average value increased by 5 percent over 1983's $11.58/ton. Over $23 million in royalties were collected from federal leases in 1984, an increase of about $8 million over 1983's $15 million. This increase is primarily due to readjustments of federal leases from a system based on the weight of the coal to a system based on the value of the coal produced, as well as an increase in production on newer federal coal leases that already require royalties be paid on the value of the coal. The State of Wyoming is entitled to 50 percent of the royalties from federal coal leases located in the state. Wyoming accounted for about 66 percent of the 104.2 million tons of federal coal produced in the United States in fiscal year 1984 (U.S. Department of the Interior, 1985).

Data on the production and consumption of energy in the nation and in each state also became available recently. Wyoming ranked second (behind Alaska) in total per capita energy use in 1983; each person in the state accounted for the consumption of 728 million Btu's (U.S. Energy Information Administration, 1985a). About 59 percent of this total was used for industrial purposes (ranking Wyoming third), 21 percent was used for transportation (ranking Wyoming second), and 9 percent was used for commercial purposes (ranking Wyoming third). A total of 573 trillion Btu's of energy were consumed in the state in 1983, with 55 percent of the energy being supplied by coal, 28 percent supplied by petroleum, and 15 percent supplied by natural gas.

A total of 293.8 trillion Btu's of energy were produced at electrical generating plants in Wyoming in 1983; about 96 percent of this was produced by coal-fired plants and most of the remainder was produced at hydroelectric plants (U.S. Energy Information Administration, 1985b). Of the total energy produced from electricity in 1983, 198.7 trillion Btu's, or 68 percent, were used out-of-state, and 95.2 trillion Btu's, or 32 percent, were consumed in-state. About 59 percent of the electricity consumed in-state was used for industrial purposes, 22 percent went to residences, and 19 percent was used commercially.

In other news concerning electric utilities, a recent survey by the Atomic Industrial Forum has shown that electricity generated from coal is now cheaper than electricity generated from nuclear energy. In 1984, a kilowatt-hour of electricity cost 4.1 cents when produced from nuclear energy, 3.4 cents from coal, and 7.3 cents from oil. In 1983, a kilowatt-hour cost 3.5 cents to produce from either coal or nuclear energy. For comparison, in 1982, nuclear energy-produced power was 3.1 cents and coal--produced power was 3.2 cents. Although many factors have led to the increased costs associated with producing electricity from nuclear energy, most would agree that cost overruns, delays, the economy, and increased regulatory requirements have all contributed. On the other hand, the oversupply of coal and the associated bargain-basement prices for it have both contributed to coal's present position. In the next 10 years, nuclear power plants are projected to account for much of the increased electrical-generating capacity needed to meet growing power demand. If the cost differential between nuclear energy and energy generated from coal continues to increase, it is possible that even more nuclear power plants will be canceled or delayed and that coal-fired plants will be substituted for them.

In coal transportation, the competition for coal-hauling contracts between Burlington Northern (BN) and Chicago and North Western Transportation Company (C&NW) in the Powder River Basin continues to have its effects. Cordero Mining Company recently completed a private 1.5-mile rail spur, linking the Cordero Mine to tracks jointly operated by BN and C&NW, and began shipping coal over the spur in late August. The 3.3-million-ton per year coal shipments, which began about a year ahead of schedule, are destined for San Antonio City Public Service via coal hauling contracts with the C&NW, the Union Pacific, and the Southern Pacific Transportation Company. City Public Service plans to build two additional [illegible] megawatt coal-fired units in 1993 and [illegible] respectively. These plants will require about 3 million tons of subbituminous coal or 4 million tons of lignite per year. Prior to its contracts with C&NW, the utility had only considered fueling these two units with Texas lignite. But now with C&NW transportation rates reportedly $8/ton cheaper than older rates with the BN, the utility is again considering Powder River Basin coal for the units.

Another effect of the competition for coal transportation contracts is that Burlington Northern is hauling less coal, which has slowed or stopped BN's annual growth rate. In a September 30, 1985, article (McGraw-Hill, Inc., 1985), it was estimated that new contracts that BN lost to C&NW were worth from $250 million to $300 million in revenues and that BN's earnings in 1985 would drop about $150 million. To compensate for loss of revenues and to become more price competitive, BN has downsized some of its operations, decentralized several offices to emphasize sales to utility buyers, and improved operational efficiency of its unit

train runs. BN has estimated that 4,500 of their employees will lose or have already lost their jobs because of the contracts that have been lost. This number includes 56 BN employees based in Gillette who have been laid off since July 1985. BN estimates that an average of 229 employees are required to move 1 million tons of coal. Because of streamlined unit train operations, BN has hauled the same amount of coal (about 68 million tons) in the first half of 1985 as it did during the first half of 1984, but with 20 percent fewer train sets and 200 fewer locomotives.

As part of an effort to increase efficiency of unit train runs, BN has also begun to use "super unit trains" between Gillette and Lincoln, Nebraska. These special unit trains have twice as many coal cars as the normal 100-car trains and are about 12,800 feet long (over two miles). The trains can reportedly carry about 30,000 tons of coal and are powered by six diesel locomotives, three in front and three in the middle. The center locomotives are linked to the front locomotives by a radio system that controls acceleration, tracking, and driving function. BN is experimenting with a unit train tracking and dispatching system that uses a Navstar Satellite.

Although no new coal-purchasing contracts have been announced in the last few months, electric utility companies have been soliciting bids for three long-term contracts and at least four short-term (or spot market) contracts. Meanwhile, Nerco Coal reportedly began production of its newly-constructed Antelope Mine in northern Converse County sometime in November of 1985. This mine becomes Converse County's second active coal mine. Glenrock Coal Company's Dave Johnston Mine, located north of Glenrock, has been the county's only coal mine for a number of years. The Antelope Mine will produce 2.5 million to 3.0 million tons of coal per year and has major contracts with Platte River Power Authority's Rawhide No. 1 Power Plant near Fort Collins, Colorado, and with Systems Fuels, Inc., a fuel buyer for Middle South Utilities, which supplies coal to power plants located in Louisiana.

The long legal battle between Carbon County Coal Company, the operator of Wyoming's only major underground mine, and Northern Indiana Public Service Company (NIPSCO) is now nearing settlement. Early last fall, Carbon County was awarded $181 million in damages by a U.S. District Court in Indiana for the 15 years that remained on Carbon County's 22-year coal contract with NIPSCO. The court ruled that the 1.5-million-ton-per-year contract was invalid, thereby enabling NIPSCO to cancel any further deliveries from Carbon County. As a result, Carbon County Coal Company suspended mining operations in mid-October and is currently seeking buyers for 115,000 tons of coal stockpiled at the mine. As of the end of November, no employees at Carbon County had been discharged, but with mining suspended, the 283 people employed at the mine may be facing a layoff. The coal company did sell 20,000 tons of its stockpiled coal to Illinois Power Company on the spot market in late November.

Arch Mineral Corporation laid off 62 employees from its Seminoe No. 2 Mine in December. The company cited insufficient sales contracts from its mine in Carbon County as a reason for the layoff. Earlier this year, Arch announced that its 1.3-million-ton-per-year contract with Kansas Power and Light Company would not be renewed.

In federal coal leasing activity during the past quarter, the U.S. Department of the Interior released a supplement to its Draft Environmental Impact Statement on the Federal Coal Management Program and reoffered an emergency bypass coal lease tract in an October 16, 1985 coal lease sale. The tract had been offered earlier in July 1985, but the sole bid from Medicine Bow Coal Company was rejected because the bid did not meet Interior's calculated fair market value. In the reoffering, Medicine Bow Coal increased its previous bid of $187.51 per acre to $481.29 per acre and again was the sole bidder. The U.S. Bureau of Land Management accepted the new bid, and following a review by the Justice Department, expects to issue the lease.

A U.S. District Court upheld a suit brought by Whitney Benefits and Peter Kiewit Sons, Company and ordered the U.S. Department of the Interior to exchange other federal coal for Whitney Benefits' holdings in Sheridan County. Earlier, Interior had determined that the Whitney tract did not qualify for exchange because it has a "negative value". At stake is an estimated $8 million coal reserve. The court ordered the exchange be completed by January 30, 1986.

Richard W. Jones, Coal Geologist,
Geological Survey of Wyoming

# #

Winter Agricultural Outlook

Large supplies of most farm commodities, both global and domestic, dominate the agricultural outlook as we move into 1986. Farm prices and incomes continue under pressure as large grain supplies have driven grain prices lower this past year. Slow inflation and ample supplies of farm products should continue to limit increases in retail food prices in 1986.

The 1985 farm bill was passed and signed into law by the president in late December. Although similar in many respects to previous legislation, it is an attempt by the administration and Congress to provide a transition toward a market-oriented farm policy. The five-year bill reduces loan rates for wheat, feed grains, rice, and other agricultural commodities, sets target prices for those program commodities, extends and expands export programs of the U.S. Department of Agriculture, contains strong new soil conservation provisions, and attempts to improve the effectiveness of credit programs of the Farmers' Home Administration.

Provisions of primary importance to Wyoming producers are as follows: For wheat, the target price for 1986 and 1987 is $4.38 per bushel for program participants. The Secretary of Agriculture set the loan rate at $2.40 per bushel for the 1986 crop. For wool producers, there appears to be no change from the 1981 farm program. Sugar producers will be guaranteed a minimum $0.18/lb. for the five-year duration of the bill. Farm operators should contact a county ASCS office for complete particulars of how the new farm bill will impact their operations.

GRAINS

Bumper harvests in many world regions, especially in the United States and the Soviet Union, have boosted world crop supplies for the 1985/86 season. Continued large production in many importing countries, notably the Soviet Union and China, will cause world agricultural trade in 1985/86 to decline. Intense competition from other exporters will cause further shrinkage in the U.S. share of world trade in the coming year. U.S. farm exports dropped sharply in 1984/85 to $31 billion, from the 1980/81 peak of $43.8 billion. The U.S. dollar has weakened 20 percent from the March 1985 high but still must move lower in order to have major impacts of U.S. grain exports in the coming year.

U.S. wheat production for the 1985 crop year is estimated at 2.4 billion bushels, down marginally from 1985. Declining exports, however, resulted in a projected carryover of 1.74 billion bushels at the end of this crop year. There is little optimism on the horizon for stronger prices for the coming year, barring a major production catastrophe here or abroad. Participation in the farm program pencils out to be the best alternative for most grain producers.

Feed grains are also in abundant supply for the coming year with expected lower prices. Record crops of corn, barley, and sorghum result in a 20 percent larger 1985 feed grain crop. Coupled with declining exports, this will result in projected carryover stocks 220 percent larger than a year ago. These burdensome supplies and resulting lower prices should entice many producers into participating in the 1986 farm program.

LIVESTOCK

Livestock prices are strengthening, as earlier cutbacks in livestock breeding herds are reducing marketing below year-ago levels. As meat production in 1986 continues under 1985 levels, livestock producers should enjoy more positive returns relative to 1985.

In mid-February, the USDA released estimates of the cattle inventory as of January 1, 1986. The U.S. cattle inventory is expected to drop below 105 million head, the lowest level since the early 1960s. Consistent with the deline in total cattle numbers is the sharp decline in beef cows and smaller calf crops. The largest calf crop in U.S. history occurred in 1974, when nearly 51 million calves were born. Current estimates for the 1985 calf crop are in the neighborhood of 41 million head. These reduced supplies should have a positive price impact on the production industry in the next two to three years.

Fed cattle prices have rebounded to the $63 to $65 level after bottoming out below $50 last July. Feeders, who lost thousands of dollars last spring and summer, began recouping some of their losses this past fall and winter. There will be periods of price weakness in 1986, but if orderly marketing continues, it is anticipated that the feed cattle market will continue to move upward through 1986.

Feeder cattle prices did not decline as sharply as those for fed cattle last summer; thus, the price increases from mid-summper 1985 to early 1986 have not been as dramatic. Improved fed cattle prices have put strength into the feeder cattle market. Feeder cattle prices should equal the highs of early spring 1985, as dwindling supplies and lower feed costs create improved demand for feeder-type cattle.

The overall financial picture for Wyoming farmers and ranchers is not likely to improve in 1986. The only positive aspects that can be identified are marginally improved cattle prices, stable to lower interest rates, and a land market that is close to bottoming out. It may be some time before agriculture experiences significant price and income increases. However, as the adjustment process now underway runs its course, returns on new investment in farming will again become competitive.

Robert D. Carver
University of Wyoming

# #

Job Openings Outlook

Parole and Probation Officers

Parole and probation officers help legal offenders readjust to society. They provide emotional support and guidance to help people identify and solve their problems. Parole officers work with persons who have been released from a correctional institution. Most of the parole officer's time is devoted to supervision and counseling of offenders after their return to the community. Probation officers work with juveniles and adults who have been released by a court with or without sentence investigations, counsel offenders, investigate home conditions of clients, write reports, and provide court testimony.

Parole and probation officers are employed by correctional institutions, juvenile counseling centers, the courts, and other government agencies. Most employers require a bachelor's degree plus two years' experience in counseling and/or criminal justice to enter this occupation.

In Wyoming, there is a slight shortage of workers. Although prison populations have been expanding, the outlook depends mainly on state government funding. This is influenced by general economic conditions and by public attitudes toward counseling and rehabilitation of legal offenders. An increase in diversion projects, such as more intensive supervision of legal offenders and victim restitution programs, is creating an increased need for officers in Wyoming. Also, an increase in funding for programs dealing with legal offenders may result in too few workers to meet the demand.

Beginning salaries for inexperienced parole and probation officers are about $1,390 per month. Experienced officers earn around $1,610 per month. Average maximum salary is around $2,450 per month. It takes eight years to reach this pay level.

Opticians

Opticians prepare, fit, and sell corrective lenses and eyeglasses according to prescriptions of opthalmologists and optometrists. Dispensing opticians fit glasses and sell frames, while optical technicians (or manufacturing opticians) prepare glasses for customers by grinding, polishing, cutting lenses, and mounting them in frames. Some opticians also make and fit contact lenses.

The outlook for opticians in Wyoming depends on the number of health and life care programs, the number of optometrists and opthalmologists in the area, and replacement of those who leave the occupation. Growth results from an increase in demand for prescription lenses caused by population growth and an expanding numbers of older persons (a group most likely to need glasses). Currently, demand is fairly strong for trained and experienced applicants. Opportunities are best for individuals who possess the ability to develop specialized skills needed in creating and making eyewear.

Most employers require that applicants complete a specialized training program. Certification is available to dispensing opticians by the National Academy of Opticianary. Opticians who want to be certified must be high school graduates; be graduates of an accredited school of opticianary, or show evidence of five full years experience as a dispensing optician, or show evidence of licensure by exam in a U.S. state; pass the exam with a minimum score of 70; and pay a $50 fee for each exam.

Skills are gained through experience working with an optician, through a formal, out-of-state training program, or through an apprenticeship program. The National Academy of Opticianary offers home study courses in continuing education for currently employed opticians and optical employees. For more information contact: National Academy of Opticianary, 10111 George Palmer Highway, Suite 112, Bowie, MD 20716, (301) 577-4828.

Entry wages in Wyoming for opticians with experience or training are around $7.00 - $7.50 per hour. Maximum wages are between $7.70 - $12.00 per hour. Certification is not mandatory, but wages can be as much as $26,000 per year for those who are certified. Opticians whose jobs involve sales and no lab work earn considerably less.

For further information, contact Tammy Argyle, Wyoming Career Information System, Box 3808 University Station, Laramie, WY 82071, (307) 766-6189.

Tammy Argyle, Wyoming
Career Information System

# #

Wyoming Coincident Indicators Index

Last October's preliminary indications showed Wyomings third quarter 1985 economic activity picking up. Unfortunately, the Wyoming Coincident Indicator Index (WCII) indicates that the Wyoming economy remained stagnant during third quarter 1985, registering no real gains. The WCII is a measure of the Wyoming economy and is derived using economic variables whose movements coincide with movements in the overall economy. It is computed quarterly by the Division of Research and Statistics, Department of Administration and Fiscal Control.

The WCII is a composite index which uses four economic variables: 1) Wyoming total sales and use tax collections in 1972 dollars; 2) Wyoming state total insured wages paid in 1972 dollars; 3) Wyoming state total employment; and 4) an industry index comprised of one economic variable from each of Wyoming's three major industries. The three industries are agriculture, mining, and tourism, and the respective variables are: 1) prices received by Wyoming farmers and ranchers for all commodities; 2) Wyoming drilling rig count; and 3) Wyoming motor fuel gallonage sales. The historical period over which the index is calculated is January 1972 to June 1985.

Presented on the accompanying graph are the plots for three time series: one for the index using seasonally adjusted data, one for the index using data which has not been seasonally adjusted, and one for the U.S. Coincident Indicator Index. The unadjusted index is presented to show the seasonality of the Wyoming economy. The U.S. index is shown in order that it might be compared to the Wyoming index. The more important Wyoming index, and the one with which all further analysis and description will be concerned, is the seasonally adjusted index. In this index, turns up and down are caused by factors other than seasonality. The base month is January 1972, which has an index value of 100. An index value doesn't have any meaning in and of itself but is valid only when compared to another value from the same index.

Employment, motor fuel sales, rig count, and agriculture prices were all down from 1984 levels, helping the Wyoming economy to stay in the doldrums. On a somewhat brighter note, sales tax collections and wages were up from 1984, approaching the high levels of 1981 and 1982, when Wyoming's economy was faring much better. Unfortunately, once inflation is accounted for and the nominal figures are deflated, even sales tax and wages show no real growth over the quarter.

The remainder of 1985 could show some improvement over the third quarter. At the national level, Christmas retail sales were higher than 1984 and hopefully Wyoming retail sales will follow suit. The Wyoming economy, bolstered by a strong Christmas season could show some improvement through fourth quarter, while the outlook for 1986 is still cloudy.

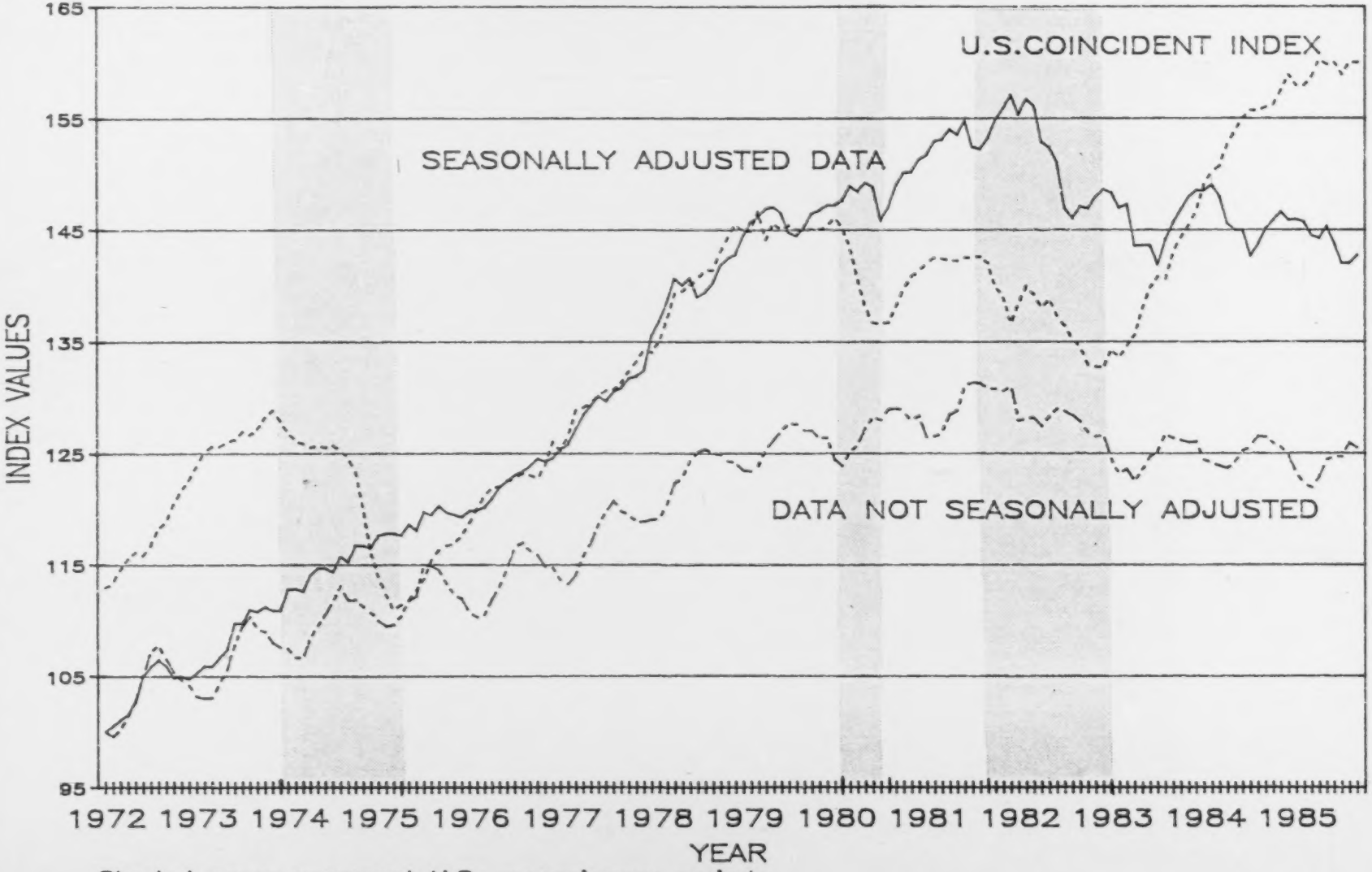
Steve Sommers, DAFC

# #

WYOMING COINCIDENT INDICATORS INDEX

JANUARY 1972 THROUGH SEPTEMBER 1985

DECEMBER 18, 1985



Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

Industry Profile

A Wyoming Trade Review

INTRODUCTION

The trade sector forms an integral part of any economy, regardless of its size. The provision of wholesale and retail goods, both the staples of life and amenities, contribute in no small way to the health of both the state and the local economy. Economic activity created through retail trade generates millions of tax dollars to support state-mandated programs; diversity within the retail sector affects not only the degree to which locally earned dollars stay at home but the general quality of life within a community as well.

The purpose of this article is to explore the trade sector in Wyoming. For the purposes of discussion, the trade sector shall be used as an umbrella term including both wholesale and retail trade.

HISTORY OF WYOMING TRADE

Trade has been a part of Wyoming since the days when the state was the sole domain of the American Indian. The tribes that roamed throughout the state traded goods based upon a barter system. Later, with the coming of the mountain men, bartering was also practiced with white trappers and traders. The Green River Rendezvous and similar gatherings were the shopping sprees of their day, and afforded ample opportunities for trade.

The development of trade has naturally followed population growth in the state. A new era in Wyoming trade commenced during the 1830s with the building of permanent trading posts-stockades. The first such stockade, called Fort Bonneville, was build in 1832 near the present site of Daniel in Sublette County. Similar trading posts, which eventually became Fort Laramie and Fort Bridger, were erected at one or more sites beginning in 1834.

The westward expansion during the 1840s and 1850s provided further impetus to trade development. Various way stations along the Oregon and Overland trails were established to provide goods to pioneer travelers headed west.

The coming of the Union Pacific Railroad in the autumn of 1867 was a major factor in the development and diversification of trade. The initial function of the towns springing up along the rail route was to keep the railroad running. As infant communities like Cheyenne, Laramie, and Rawlins took root, however, new economic activities emerged. Coal mines opened to provide fuel for the steam locomotives. Ranches were established in the hinterlands surrounding such communities. With such increased activity, the trade sector became increasingly large and diverse. Communities that sprang from the railroad development thus became important as regional trading centers serving a variety of needs. Until the late 1880s, the service areas of such communities as Cheyenne or Rawlins stretched halfway to the next town east and west along the railroad, and north and south from territorial boundary to territorial boundary.

As new lands were opened for settlement, new opportunities were created for trade. Some new trade areas followed the extension of the rail line from Newcastle to Sheridan. Others were created long distances from any railroad by Mormon colonists in the Big Horn Basin and the Star Valley. In each new district, new towns were founded to supply specialized services or goods to anyone near enough to obtain them.

By 1900, the trade areas in the state varied considerably in size. The city of Cheyenne, for instance, was not only the state's largest city and state capital, but a major retail and wholesale center as well. Major early service centers included Cheyenne, Rawlins, Rock Springs, Evanston, Lander, Casper, Sheridan, Thermopolis, and Basin.

Those Wyoming towns growing the most in population became proportionately more important as trade centers. The growth in population, and the basic economic activity that underpinned such growth, provided the groundwork for expansion and diversification in the trade sector. As the population became increasingly urban, the importance of certain regional trade centers solidified. By 1920, the five largest cities--Cheyenne, Casper, Laramie, Sheridan, and Rock Springs--attained a population rank-order they would retain for the next half-century, and a concomitant importance as regional trade centers.

According to U.S. Census figures, the value of business produced by the state's 4,692 retail establishments was $1.654 billion in 1977. Cheyenne had a retail sales volume of $238 million, while Casper had a volume of $293.6 million. Rock Springs, another historic trade

Table 1: Covered Employment and Payrolls in the Wholesale Trade Sector by County (2nd Qtr. 1975, 2nd qtr. 1980, and 2nd Qtr. 1985)*.

	Second Quarter, 1975			Second Quarter, 1980			Second Quarter, 1985		
County	# of Employing Units	Avg. Employ	Total Payrolls	# of Employing Units	Avg. Employ	Total Payrolls	# of Employing Units	Avg. Employ	Total Payrolls
Albany	30	135	($) 276,608	33	225	($) 640,067	38	188	($) 755,600
Big Horn	12	83	185,929	23	132	381,848	19	329	1,864,101
Campbell	41	229	632,912	63	534	2,571,245	92	854	5,435,525
Carbon	21	85	166,254	35	190	815,272	35	224	1,183,393
Converse	12	55	96,267	27	130	391,202	40	246	1,094,350
Crook	6	6	24,482	6	12	40,092	6	35	129,967
Fremont	44	257	559,011	68	343	1,335,773	74	488	2,061,836
Goshen	29	210	308,038	36	288	724,742	37	363	855,863
Hot Springs	10	32	75,299	13	33	163,340	13	84	590,008
Johnson	9	22	53,176	13	28	95,606	17	47	202,168
Laramie	151	770	2,030,724	177	1,025	4,252,741	137	791	3,832,632
Lincoln	13	169	451,318	17	139	481,694	26	141	699,416
Natrona	277	1,866	5,638,990	369	4,140	20,873,404	408	3,261	20,010,944
Niobrara	8	35	42,488	5	20	57,369	8	38	126,335
Park	43	190	460,538	59	316	953,198	58	392	2,142,743
Platte	8	33	61,014	17	71	219,937	12	51	182,262
Sheridan	43	283	592,067	50	340	1,191,621	56	348	1,672,191
Sublette	4	57	89,158	5	21	92,078	10	68	253,819
Sweetwater	64	394	1,077,780	88	764	3,714,453	94	626	3,654,032
Teton	17	56	105,292	24	104	441,278	25	93	439,425
Uinta	16	71	122,580	25	163	672,106	57	405	2,185,078
Washakie	30	127	249,286	38	179	575,222	35	196	768,384
Weston	14	32	76,651	12	75	411,210	12	66	376,263

*Source: Wyoming Employment Security Commission. State and County Summary of Covered Employment and Total Payrolls by Industry Wyoming ESC.

Table 2: Covered Employment and Payrolls in the Retail Trade Sector by County (2nd Qtr. 1975, 2nd qtr. 1980, and 2nd Qtr. 1985)*.

	Second Quarter, 1975			Second Quarter, 1980			Second Quarter, 1985		
County	# of Employing Units	Avg. Employ	Total Payrolls	# of Employing Units	Avg. Employ	Total Payrolls	# of Employing Units	Avg. Employ	Total Payrolls
Albany	213	1,807	($)2,112,724	232	2,455	($)3,986,480	221	2,423	($)4,998,753
Big Horn	92	444	448,969	87	458	671,083	71	404	713,076
Campbell	107	1,037	1,614,714	172	2,108	4,453,268	211	2,501	6,597,500
Carbon	165	1,261	1,682,723	166	1,467	3,314,460	156	1,315	2,888,530
Converse	68	447	615,472	102	940	1,928,008	87	653	1,608,046
Crook	43	229	240,373	51	182	269,826	48	236	413,350
Fremont	248	1,809	2,363,542	296	2,743	5,775,770	297	2,417	5,803,735
Goshen	106	731	1,050,041	97	743	1,402,551	98	735	1,710,264
Hot Springs	55	349	308,628	57	422	718,839	54	383	730,355
Johnson	69	354	399,722	64	403	699,567	72	519	996,971
Laramie	369	4,199	5,806,381	410	5,925	12,254,476	436	6,692	16,818,901
Lincoln	96	469	488,257	105	597	926,234	119	822	1,543,148
Natrona	426	4,401	6,982,367	484	6,363	15,430,624	489	6,082	16,698,056
Niobrara	36	197	251,675	26	210	321,365	30	227	454,013
Park	192	1,301	1,542,498	211	1,452	2,669,415	208	1,844	4,039,244
Platte	74	532	598,522	91	731	1,286,046	78	544	1,097,242
Sheridan	182	1,484	1,943,820	197	1,952	3,926,434	201	1,892	4,789,860
Sublette	50	223	231,267	58	323	613,748	59	332	653,359
Sweetwater	229	2,221	3,078,092	261	3,197	6,618,220	254	3,111	8,016,844
Teton	137	1,005	1,144,946	184	1,559	2,787,906	210	1,759	3,938,207
Uinta	90	733	768,456	87	1,096	2,036,011	123	1,575	3,787,799
Washakie	88	453	620,107	81	610	1,093,795	83	562	1,301,350
Weston	64	376	478,840	65	435	726,985	58	377	1,046,080

*Source: Wyoming Employment Security Commission. State and County Summary of Covered Employment and Total Payrolls by Industry Wyoming ESC.

center, recorded $100.1 million in retail business in 1977. Fifteen other Wyoming towns posted between $20 million and $100 million in retail sales for the period.

Data compiled from the 1982 Census of Retail Trade indicate that Wyoming's 5,616 retail stores had sales totaling $2.8 billion. Casper had the greatest retail sales for the period, accounting for 16.5 percent of the state total. Other major retail centers included Cheyenne, Rock Springs, Gillette, Laramie, Sheridan, Evanston, Riverton, Jackson, and Rawlins.

On the wholesale side, there were 879 wholesale firms in Wyoming in 1977, with sales of $1.94 billion, according to the U.S. Census. Casper was the state's leading wholesale center with 184 establishments and a 44.8-percent share of the state's total wholesaling volume. Gillette, with only 35 wholesale establishments and roughly a 10-percent share, occupied second place. Cheyenne was third in wholesale volume with 85 wholesale businesses and an 8.7-percent share of the total wholesale-dollar volume. Other centers with at least $10 million in wholesale business were Sheridan, Worland, Rock Springs, Cody, and Laramie.

Data from the 1982 Census of Wholesale Trade indicate that Wyoming's 1,091 wholesale establishments had sales totaling $3.3 billion for the period. Natrona County led all counties in the state, accounting for 45.7 percent of total sales by wholesalers. Casper led all cities, accounting for 41.5 percent of the sales. Other important wholesale centers in order of sales were Gillette, Cheyenne, Rock Springs, Evanston, Sheridan, Riverton, Torrington, Cody, and Rawlins.

TRADE CLASSIFICATIONS

Descriptions of the trade sector in Wyoming are often based upon the Standard Industrial Classification (SIC), devised by the Federal Office of Management and Budget. Under this system, a business is classified according to its primary activity, which is determined by the principal product or products produced, distributed, or by the services rendered.

Wholesale trade includes "establishments or places of business primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional, farm, or professional business users; or to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies," according to the 1972 Standard Industrial Classification Manual. The principal types of establishments included by the definition are merchant wholesalers (wholesalers who take title to the goods they sell); sales branches and sales offices (maintained by mining or manufacturing firms apart from their plants or mines for the purpose of marketing their products); agents, merchandise or commodity brokers, and commission merchants; petroleum bulk stations; and assemblers, buyers, and associations engaged in the cooperative marketing of farm products.

The chief function of wholesale establishments is selling goods to trading establishments, or to industrial, commercial, institutional, farm, and professional business users, according to the SIC manual. In addition to selling, wholesale businesses frequently extend credit, grade and sort goods, deliver goods, and participate in product promotional activities.

Wholesale trade can be separated into two major segments: A durable goods segment and a nondurable goods segment. The durable goods segment includes wholesalers of automobile equipment, construction material, electrical goods, and plumbing and heating supplies. The nondurable goods segment includes wholesalers of paper products, drugs, apparel, chemicals, and alcoholic beverages.

Retail trade, the largest trade component in Wyoming, includes establishments engaged in selling merchandise for personal or household consumption, and rendering services incidental to the sale of goods, according to the SIC manual. In general, retail businesses can be classified according to the principal lines of commodities sold. The retail establishment is normally a place of business and is engaged in activities aimed at attracting the general public to buy. The retail establishment buys or receives merchandise as well as selling merchandise; the business may also process its products, although such processing is considered incidental or subordinate to selling.

As noted, retail trade establishments usually are engaged in selling merchandise for personal or household consumption. Exceptions to this general rule are made necessary by trade practices. A lumber yard, for instance, may be classified as a retail establishment if it sells to the general public, even if the largest proportion of its sales is made to building contractors.

Retail trade is classified according to eight major types of firms in the SIC manual. These classifications are building materials, hardware, garden supply, and mobile home dealers; general merchandise stores; food

stores; automotive dealers and service stations; apparel and accessories; furniture and appliances; eating and drinking places; and miscellaneous retail.

TRADE EMPLOYMENT

In terms of total numbers, wholesale and retail trade combined employ more people than any other sector of the Wyoming economy except services. In 1984, the trade sector employed approximately 45,000 persons. Although this figure is down from a peak employment figure of about 50,000 attained in 1981, it still represents over 20 percent of the state's total employment. However, this percentage is slightly less than the overall average for the U.S.

Trade is a secondary activity and thus is very susceptible to changes that occur in basic industries such as construction or mining. Employment figures for wholesale activity indicate that average covered employment increased by 82.5 percent between the second quarter of 1975 to the second quarter of 1985. The largest increase occurred between the second quarter of 1975 and the second quarter of 1980, when average covered employment rose from 5,114 to 9,272. Between the second quarter of 1980 and the second quarter of 1985, wholesale covered employment rose by a scant .7 percent. These figures are apparently reflections of the cresting and waning energy boom in the state, which was followed by a serious recession. Not surprisingly, the period between the second quarter of 1975 and the second quarter of 1985 also saw increases in the number of employing units and in total wholesale payrolls. Over the period, the number of employing units increased by 67.6 percent, or by 528 units. At the same time, the total wholesale payroll rose from $12,971,320 to $50,516,332.

In Wyoming, the largest wholesale employers are in the motor vehicles and auto equipment; machinery, equipment, and supplies; groceries and related products; chemicals and allied products; and petroleum and petroleum products categories. During the period between the second quarter of 1975 and the second quarter of 1985, the machinery, equipment, and supplies category was the largest wholesale trade employer. Average employment in this category increased 107 percent during the period from the second quarter of 1975 to the second quarter of 1980, before falling 15.4 percent between the second quarter of 1980 and the second quarter of 1985.

Employment in motor vehicles and auto equipment followed a similar pattern, with increasing employment between 1975 and 1980 followed by decreasing employment between 1980 and 1985. Among the large wholesale employers, however, the motor vehicle and auto equipment segment was the only segment to register a decrease in the number of employing units and in total payroll between the second quarter of 1980 and the second quarter of 1985.

Employment in chemicals and allied products, and in petroleum and petroleum products, increased during the entire period between the second quarter of 1975 and the second quarter of 1985. Groceries and related products saw the only decrease in average employment between the second quarter of 1975 and the second quarter of 1980 among large wholesale employers; employment in the segment then rose over 33 percent between the second quarter of 1980 and the second quarter of 1985.

Average covered employment in retail increased by 41.64 percent between the second quarter of 1975 and the second quarter of 1985. As with wholesale, the largest employment increase in retail occurred between the second quarter of 1975 and the second quarter of 1980, when average employment rose from 26,409 to 37,401.

The Employment Security Commission reports that retail activity was not as severely affected by the recession as wholesale activity. Average covered employment decreased only 5.1 percent in retail between 1981 and 1984.

The period between the second quarter of 1975 and the second quarter of 1985 saw increases in the number of employing units and total payrolls in retail. The number of employing units increased by 20.8 percent over the period, while the total payroll jumped from $35,003,022 to $90,644,682.

In Wyoming, the largest retail employers are in the building materials, hardware, garden supply, and mobile home dealers; general merchandise stores; food stores; automotive accessories; furniture and appliances; and eating and drinking places categories. Of these, eating and drinking places are the most important retail employers. During the second quarter of 1985, the 980 employing units in this category employed an average of 13,779 persons. This category is subject to wide seasonal fluctuations, however. During the summer months, employment traditionally increases.

Automotive dealers and service stations employed an average of 6,253 workers during the second quarter of 1985. This represents a 3.4 percent decrease from the second quarter of 1980, but an increase of 18.2 percent over the second quarter of 1975. Surprisingly, the number of employment units decreased from 779 in the second quarter of 1975 to 639 during the second quarter of 1985.

In terms of county employment, Natrona, Campbell, Laramie, Sweetwater, and Fremont counties registered the highest average wholesale employment during the second quarter of 1985. While Natrona County has consistently registered the highest wholesale employment, such employment has fluctuated since 1975. Average wholesale employment in Natrona County increased by 122 percent between the second

quarter of 1975 and the second quarter of 1980, but dropped by 21.2 percent between the second quarter of 1980 and the second quarter of 1985.

During the second quarter of 1985, Campbell County placed second to Natrona County in wholesale employment, followed by Laramie County. Campbell County registered an average wholesale employment of 854, or a 273 percent increase when compared to the second quarter of 1975.

During the second quarter of 1985, Laramie, Natrona, Sweetwater, Campbell, and Albany counties registered the highest average retail employment. Between the second quarter of 1980 and the second quarter of 1985, Laramie County replaced Natrona County as number one in total retail employment. Over the period, retail employment in Laramie County increased by 12.9 percent, while such employment dropped by 4.4 percent in Natrona County.

According to the Wyoming Employment Security Commission, employment in the trade (combined wholesale-retail) sector is expected to increase from 47,749 in 1984 to 59,837 in 1990, or by 25.3 percent. The "managerial and administrative" occupational category is projected to grow the most, followed by service occupations within the sector.

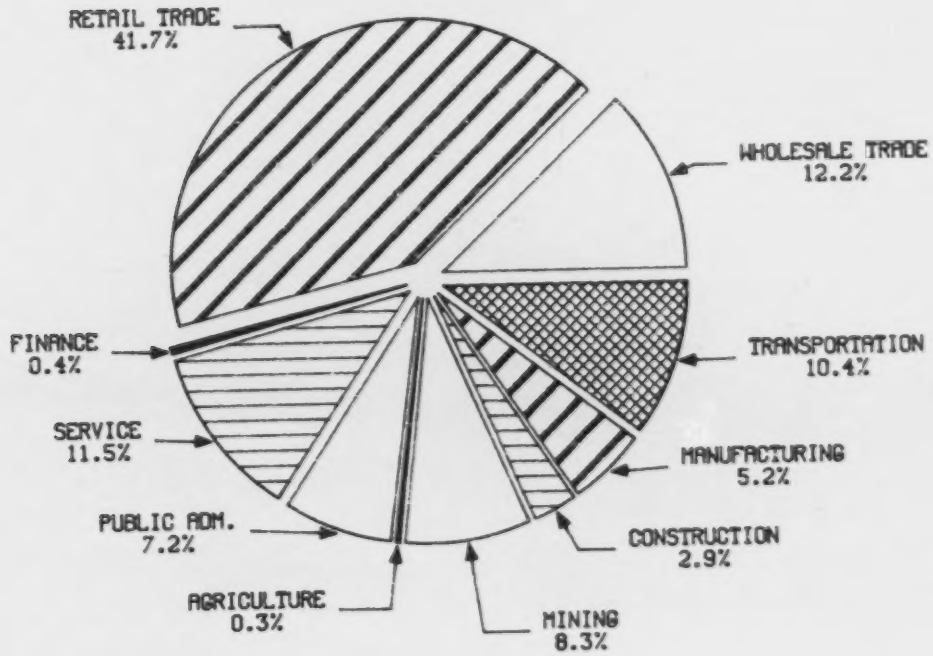
TRADE SECTOR EARNINGS

In 1983, the trade sector generated 12.55 percent of Wyoming's total earnings (by place of work), according to the Regional Economic Information System, Bureau of Economic Analysis (BEA). This compares with 14.16 percent that was generated by the trade sector in the U.S. as a whole.

Wholesale activity in Wyoming accounted for 35.2 percent of total earnings generated by the trade sector in 1983. Between 1976 and 1983, earnings generated by state wholesale activity increased from $69,673,000 to $196,075,000. This represents an increase of 181 percent over the period, nearly double the 91 percent increase experienced in the U.S. overall.

In Wyoming, wholesale-generated earnings reached a peak of $230,375,000 in 1981.

WYOMING SALES TAX COLLECTIONS
BY MAJOR INDUSTRIAL SECTORS
FISCAL YEAR 1985



SOURCE: Dept. of Adm. and Fiscal Control. Wyoming Sales Tax Revenue Report (1985).

Table 3: Estimated Volume of Retail Sales by County, Fiscal 1985[1] (Thousands of Dollars).

County	Retail Trade	Wholesale Trade[2]	Public Administration[3]	Total Retail Sales
Albany	($) 100,603	($) 15,143	($) 18,041	($) 133,787
Big Horn	29,339	1,402	6,697	37,438
Campbell	178,568	70,726	36,249	285,543
Carbon	67,791	18,957	13,243	99,991
Converse	46,349	6,422	10,858	63,629
Crook	14,592	1,282	1,980	17,854
Fremont	135,853	16,646	29,897	182,396
Goshen	48,427	2,752	7,732	58,911
Hot Springs	19,911	11,395	4,251	35,557
Johnson	26,965	677	6,847	34,489
Laramie	294,391	39,902	50,263	384,556
Lincoln	40,064	6,916	7,999	54,979
Natrona	349,517	155,861	54,025	559,403
Niobrara	9,629	556	2,398	12,583
Park	130,746	19,531	21,441	171,718
Platte	31,527	1,663	8,087	41,277
Sheridan	113,128	8,539	18,723	140,390
Sublette	19,361	8,740	5,464	33,565
Sweetwater	173,230	54,020	33,852	261,102
Teton	100,965	1,475	6,500	108,940
Uinta	89,589	19,763	10,751	120,103
Washakie	42,347	6,592	8,488	57,427
Weston	25,818	3,584	5,022	34,424
Wyoming Total	2,659,316	774,432	456,464	3,890,212

[1]Estimates of sales are obtained by dividing sales tax collections by the effective tax rate.

[2]Represents trade of wholesale goods not sold for resale; therefore, taxed at retail value.

[3]Approximately 98 percent of this sector is comprised of sales of new and used vehicles. The remaining percentage is miscellaneous sales.

Source: Department of Administration and Fiscal Control, Division of Research and Statistics. Wyoming Sales Tax Revenue Report (1985).

Between 1981 and 1983, this figure dropped by 14.8 percent.

Retail activity in Wyoming accounted for 64.8 percent of total earnings generated by the trade sector in 1983. Between 1976 and 1983, earnings generated by state retail activity increased from $177,590,000 to $360,962,000, or by 103 percent. During the same period, earnings generated by retail activity increased by 77.6 percent in the U.S. overall. Earnings generated by retailing in Wyoming reached a peak of $371,253,000 in 1982.

In 1983, eating and drinking places contributed the most to total earnings of any retail classification. This segment reached a peak of $89,555,000 in 1982.

Prior to 1982, the "automotive dealers and service stations" segment of retail was the biggest retail contributor to total earnings. Between 1976 and 1981, the "automotive dealers and service stations" segment was the most important contributor to retail-generated earnings, increasing from $47,513,000 to $81,256,000 over the period. This segment reached a peak of $85,621,000 in 1982, before decreasing by 5.1 percent in 1983.

SALES TAX COLLECTIONS

The trade sector (wholesale-retail combined) is a major generator of state sales tax revenues. During fiscal year 1985, the trade sector was responsible for 53.9 percent of total sales tax collections.

Sales tax collections in the trade sector have continued to generally increase over the past decade. Sales tax collections from retail activity increased by 145 percent between fiscal year 1975 and fiscal year 1980, to $66,866,202. This figure represented 40.8 percent of all sales taxes collected. During the same period, sales tax collections from wholesale trade increased to $29,199,566, a 199 percent increase over fiscal year 1975 levels.

Between fiscal year 1980 and fiscal year 1985, the pace of increase in sales tax collections from retail increased at a more modest pace. Such collections increased to $79,770,486 over the period, a 19.3 percent increase. Collections from wholesale, on the other hand, peaked at $40,757,109 in fiscal year 1982, before falling to $25,741,020 in fiscal 1983. In fiscal 1985, sales tax collections from

wholesale activity stood at $23,232,966.

State sales tax collections are not only major sources of income for state and local governments, but are also indications of economic growth and activity. The state-imposed sales tax has been levied at a 3-percent rate since 1967. The tax is shared between the state government and the county of origin; two-thirds of the tax goes to the state, while the remaining one-third goes to the county of origin. The counties, in turn, distribute their share of the sales tax revenues to municipalities, based on population. The state's share of the tax is placed in the General Fund. In fiscal 1985, sales taxes contributed $107,533,757 to the General Fund, or 27.1 percent of the total. Sales taxes were second only to severance taxes in terms of overall importance.

Counties in Wyoming also have the option of levying up to an additional 1 percent sales tax, upon approval by the voters. The optional sales tax is returned to the county of origin for use in general revenue disbursements. At present, the optional sales tax is not in effect in Albany, Big Horn, Fremont, Goshen, Park, Platte, Sublette, or Washakie counties.

In addition, counties can levy a second 1 percent optional sales tax if the resultant revenues are earmarked for capital improvement projects. The revenues can be used for planning, construction, furnishing, equipping, and debt service costs associated with such projects. Imposition of the tax must be approved by the voters.

Estimating gross sales from sales tax collections can present problems. A common method of escimating gross sales is to divide a specific tax collection total by the effective tax rate. Obviously, using such a method does not include nontaxed sales. In wholesale activity, for instance, sales tax applies only to sales made directly to customers. Sales made to firms which in turn resell a product are not subject to sales tax. Thus, sales tax collections by no means represent the total volume of sales.

Estimating gross sales in retail activity can present similar problems, since six categories of sales are exempt from sales tax. These are a sale for resale; a sale to political subdivisions; sales to religious or charitable organizations; sales to out-of-state customers and shipped by interstate commerce; sales of gasoline and cigarettes; and sales of prescription drugs and devices for human relief purchased on a prescription by a medical doctor.

In addition, the tax on vehicle sales is not collected by the dealer; rather, the sales tax is collected by the county treasurer when the vehicle is registered. When reported by the State Department of Revenue and Taxation, such sales appear under "Public Administration" rather than as a retail transaction.

Difficulties notwithstanding, however, sales estimates made from sales tax collections are probably useful in at least defining the lower limits of actual sales. Using sales tax collections by major trade sector, table 3 provides an estimate of total retail sales by county for fiscal 1985. The estimates are based on a total volume of sales upon which sales tax was collected, whether in the retail trade, wholesale trade, or public administration category, as defined by the State Department of Revenue and Taxation.

According to the estimate, the top ten counties in retail sales during fiscal 1985 were Natrona, Laramie, Campbell, Sweetwater, Fremont, Park, Sheridan, Albany, Uinta, and Teton counties. Not surprisingly given their population bases, Natrona and Laramie counties have consistently ranked at the top of total retail sales volume during the past ten years. In Natrona County, estimated total sales on which sales taxes were collected increased from $258,798,000 in fiscal 1975 to $688,639,000 in fiscal 1980. In fiscal 1985, this figure had dropped to $559,403,000.

FUTURE CONSIDERATIONS

The Wyoming Futures Project, a joint public-private venture, has endeavored in recent months to examine more closely directions the Wyoming economy might meaningfully embark upon in the years ahead. One result has been the consultant's report, "Building a Strong Wyoming: Opportunities in a Troubled Economy," prepared by California-based SRI International.

The report notes that "small businesses have characterized most of Wyoming's economy since the early settlements grew up along railroad rights-of-way... As mining activity increased, the state's population grew rapidly and as a consequence small businesses of all kinds were formed during the 1970s and 1980s."

Conversely, as declines have been experienced in Wyoming's basic sectors, declines have been experienced in the secondary trade sectors as well. "Wyoming can spend considerably to develop small business during a period when the mineral resources industry is in decline," the report continues, "and the results will be minor... However, there are examples of new enterprises having great success at times of diminishing overall economic health. Retail malls, especially in Cheyenne, may be the best example. They have succeeded because they offer what today's consumers are urgently demanding. This suggests that the key to developing small business is to find special opportunities for providing goods and services that fit recently changing market demands. But small businessmen often need more than markets for their products. As entrepreneurs, they need support (often technical and management assistance, not just money) at critical times, as when they start

up."

Some assistance is already available. Both the University of Wyoming and Casper College have programs to extend technical assistance to small businesses. Financial assistance of one type or another is available through such programs as Small Business Administration loans, the Wyoming State Small Business Assistance Act, and the Capital Corporation of Wyoming. However, the report suggests that more can be done.

"Wyoming can realize significant economic benefits from a more complete small business sector," the report concludes. "Small businesses can be established to supply Wyoming employers (including those headquartered out of state). Such import substitution will generate net wealth and net employment for the state."

The report notes that such a strategy could have social benefits as well: "Potential entrepreneurs, recent college graduates, women reentering the work force, and currently struggling small business owners in Wyoming would find new opportunities in the state so that they would not have to leave," the report maintains. "Wyoming could retain more of its bright, young business talent. Further, a stronger small business sector would act to strengthen all sectors and institutions in the state by providing additional depth to the economy."

Developments to revitalize existing trade districts are similarly underway in the state. Five demonstration communities--Laramie, Cody, Casper, Sheridan, and Rawlins--have been selected to participate in the Wyoming Main Street Program. The main focus of the program is to revitalize downtown areas and to preserve historic buildings. Statistics compiled on programs elsewhere in the nation are encouraging. During three years of operation in Colorado, for example, over 300 new business starts have occurred in the downtown areas of five Main Street communities.

S.T. Mast and Ruth Tebbutt, IPR

\# \#

Selected Bibliography

Annual Report of the Department of Revenue and Taxation (1985).

Brown, Robert H. Wyoming: A Geography, Westview Press (1980).

Department of Administration and Fiscal Control, Division of Research and Statistics. Wyoming Sales Tax Revenue Report (1985).

Department of Economic Planning and Development, Industrial Development Division. Perspectives on the Economic Viability of Carbon, Fremont, Goshen and Sheridan Counties (February, 1979).

Department of Economic Planning and Development. The Economic Potential of the Casper Area Retail Sector (January, 1978).

Economic Development and Stabilization Board. "'Main Street' Comes to Wyoming." Wyoming Progress Report (July/August, 1985).

Economic Development and Stabilization Board. "Main Street Communities Selected." Wyoming Progress Report (September/October, 1985.

Employment Security Commission of Wyoming, Administrative Services Division. State and County Summary of Covered Employment and Total Payrolls by Industry (Second Quarter, 1975; Second Quarter, 1980; Second Quarter 1985).

Employment Security Commission of Wyoming, Research and Analysis Section. 1986 Wyoming Annual Planning Report.

Employment Security Commission of Wyoming, Research and Analysis Section. Wyoming Occupational Outlook: With Projections to 1990 (March, 1985).

SRI International. Building a Stronger Wyoming: Opportunities in a Troubled Economy (Executive Summary). Prepared for Wyoming Futures Project (October, 1985).

U.S. Department of Commerce, Bureau of the Census. 1982 Census of Retail Trade (Wyoming).

U.S. Department of Commerce, Bureau of the Census. 1982 Census of Wholesale Trade (Wyoming).

'Knowing Customer' Key to Retailing Success

(The following is excerpted from an interview with Ray Marquardt. Mr. Marquardt is director of the Institute for Business Management Services and director of the Wyoming Business Development Center, both on the University of Wyoming campus. The interview, which was conducted in December, probes recent developments in the Wyoming retail sector. Editing is included for the sake of clarity.)

WQU: What do we mean when we speak of the retail sector?

Marquardt: Most statistics are developed for the retail sector involving only the merchandise part of retailing. These segments are generally broken down to include building and hardware, general merchandise, food stores, automotive services, apparel, furniture, restaurants, and miscellaneous stores. But also, I would include the selling of services to consumers in retailing. In other words, my definition of retailing would be anything that is sold to the ultimate consumer, not for resale to someone else, whether it is a product or a service.

WQU: How is that distinguishable from the service sector?

Marquardt: The only difference is whether it is a tangible good or something intangible. But I consider both of them to be essentially retailing because a lot of stores sell both merchandise and services, so it is difficult to separate them out.

WQU: What factors influence performance in Wyoming's retail sector?

Marquardt: Do you mean the sector, or individual companies...?

WQU: What is the distinction? Is there a difference between the trends in the sector and individual performance?

Marquardt: If you talk about a general sector analysis, the most important factors are population and income. Of course, you need an adequate population to buy the merchandise, and those people have to be earning enough to spend on various products and services. If you are talking about the individual firm, then the story is a little bit different. It depends upon those two factors--population and income--but it also depends on the individual management and financial characteristics of the firm. The key one right now, I suppose, is how much debt a firm has. If they have a lot of debt to service, they are having a difficult time. If they have low debt or no debt, they are doing pretty well.

WQU: How would you describe the general picture for retail firms in the state right now?

Marquardt: I think it is a very difficult time for small businesses in the state. Incomes are not rising in most areas of the state, except in the southwestern corner where the Exxon plant (the LaBarge Project) has an impact. In other areas, incomes are probably going down, and maybe even the population. Fixed costs then become a more important part of the firm, and in many cases, firms cannot escape high interest rates if they have a heavy loan. So it is pretty difficult for them.

WQU: Would you count such difficulties as by-products of the declines in the mining sector in the past few years?

Marquardt: Yes. I think it would be due to lower performance in the minerals sector, and also in agriculture, two primary industries in Wyoming. This means in some cases people are laid off. Then they don't feel they have the money to spend on durable goods, or they postpone purchases.

WQU: In some areas, it seems that at the same time downtown businesses are having difficulty, expansion continues in malls and shopping centers. It doesn't seem to add up.

Marquardt: Well, in some cases it may expand the market by offering products and services that people have to go elsewhere to find. Because a mall comes in with more of a selection, there may actually be more retail dollars spent in the community. But in many cases firms going into malls simply take sales away from firms that are downtown. Nationwide, the trend is very strong toward shopping center purchases. Over 40 percent of the total retail sales in the U.S. are being made in shopping malls. In Wyoming, the magnitude might not be as great, but the general trend would probably be parallel. Another significant factor is that shopping centers located in cities in surrounding states take away a lot of business from local merchants.

Nationwide, there is a definite trend toward the mall-type concept where there is a controlled environment. The drawing power is shared by the main tenant of a shopping center. Usually, a department store is the main anchor. Then customers are drawn to the little specialty shops as well. This is essentially why the trend is toward shopping centers. The downtown areas historically have not been as well planned, so they do not have the balance of merchandise offerings that shopping centers do.

WQU: But why would shopping centers grow in a depressed or stagnant economy?

Marquardt: In severely depressed areas, I don't think they would. But a lot of times, the commitments are made before the downturn actually occurs, and they are looking at the business cycle maybe three years away. So they figure they might as well go ahead and stay with their financial commitments, and hope that in the three years it takes to do the planning, opening, and establishing of a store the economy will pick up enough so that the shopping center is a success.

WQU: What role does franchising play in Wyoming retailing?

Marquardt: Franchising is very important. I think the two main factors in economical retailing are the shopping center and the franchise. Franchises now account for more than one-third of retail sales nationally.

WQU: How would franchise businesses in the state differ from non-franchise businesses in such matters as survivability?

Marquardt: There are several significant differences. First, I think franchise businesses are generally better planned, from development, to examining the market, setting goals, looking at who its customers are, and also looking at what products and services are going to sell. The other aspect is that it is very hard to compete with the franchise's high level of promotion that is developed nationally. People coming into the state have watched television advertisements of the national franchises. It is very difficult to compete if you are an independent retailer selling the same type of item.

WQU: What other problems are Wyoming businesspeople facing?

Marquardt: Well, the only other item I might bring up is related to out-shopping (people shopping out of state) and that seems to be a problem for the whole state. Of course, the local communities would talk about out-shopping as being people who go outside their town to shop, and this shopping might be in another Wyoming town. I think a lot of out-shopping does occur to other states because the population centers are there. There is a draw at the corners of the state, and maybe not so much at the center of the state. And it seems to vary a little by different merchandise categories. If it is a shopping-type good--furniture and clothing especially--people can buy and transport the goods back. In general, there is an out-shopping problem because there is more selection, size, and depth of assortment elsewhere. For convenience goods--the grocery type items--people don't seem to out-shop as much.

WQU: Is there much that can be done about out-shopping. Denver will always have a better selection than Laramie. As a practical matter, is there much local merchant groups can do about that?

Marquardt: I don't know whether the merchant groups can do a lot about it. But I think the individual store can, by knowing its customer better. The small, independent retailer is competing against the shopping center retailer and the franchises. To do that, the manager really has to know the customers better and serve them better. In other words, they have to personalize their service. A lot of times, they may not even be able to have better quality merchandise. They may just have equal quality. But if they know their customers by name, know their problems, and can solve their problems, they can get the repeat business. There is still a real place for the specialty store that has a little bit of a unique offering.

WQU: Are there any types of business that seem to be doing particularly well in Wyoming right now?

Marquardt: Probably the service business is doing a little better than the general retailer. As far as a particular type of retailer, I would say probably not. There is not one that stands out. It has more to do with firms within categories, and generally, if you look at firms within categories, the ones that are doing the best are the ones that have little debt.

WQU: What do you see in the immediate outlook for small businesses in Wyoming? What kind of climate is there for starting a new business?

Marquardt: In the retail sector, I think in some cases there is a climate for development. Where people come in with a well-defined offering, I think there is a chance to get established. There is a lot of retail space for rent at a very cheap rate. In some cases, you could write a very favorable lease at a good location. One of the main elements of success in a retail store is the location. You can spend a lot of money promoting a poor location. Now there are opportunities to obtain good space. So it is really not a bad time to come into the market, if you know what you're doing.

S.T. Mast, IPR

\# \#

Repayment Ability, Realistic Projections

Important Criteria for SBA Loans

(Editor's note: Subsequent to the preparation of this article, the SBA Casper office was notified to cease its lending operations effective September 30, 1986, as part of the Reagan Administration's plans to eliminate the SBA. Plans to eliminate the agency, however, are subject to congressional action. If the SBA is eliminated, certain of its functions would be transferred to the U.S. Commerce and Treasury departments.)

With the end of the energy boom, small businesses in Wyoming have been faced with some difficult adjustment problems. Gone are the construction and energy legions of the 1970s. Gone as well are their big paychecks and discretionary incomes. The energy prices that exploded in the '70s are imploding in the '80s. The expansionary cycle that seemed to have few limits may have been a happy disruption of what is practically sustainable. The times were almost too good.

The adjustment has been a painful process. Banks have failed; in 1985, at their highest level since the 1930s. Businesses have been forced to scale back, to rid themselves of excess baggage and excessive expectations. It is a new day, and the password is "realism".

"Small business is scaling back to a level of income and expense it can live with," said Paul Nemetz, district director for the U.S. Small Business Administration (SBA) in Casper. "I think we've seen--I hope we've seen--the worst of the bankruptcies, the failures, where the debt couldn't be serviced anymore, and that perhaps in 1986 we can put that behind us and go on with some positive things."

The SBA's Wyoming District Office runs a constant portfolio of approximately 1,200 to 1,500 loan guarantees, according to SBA officials, with approximately 130 new guarantees each year. In fiscal 1985, guaranteed liability on new loans totaled approximately $32 million. Since its inception in 1953, the SBA has provided approximately $400 million in loan guarantees to Wyoming businesses.

The readjustment in the Wyoming economy since the height of the boom has been reflected in the SBA's state loan portfolio. Mahlon Sorensen, SBA district counsel, estimated that approximately 10 percent of the SBA's Wyoming guaranteed loans are problem loans. He noted that for years the problem loan rate ran between 2 percent and 3 percent.

"In relation to our portfolio," said Nemetz, "we have not suffered that much. It's just when we're at the very best out of 65 offices--practically number one in the country--it's tough to step back to being number four or five or six."

In terms of problem loans, no one area seemed to be prominent. "There was a period there if you asked us a year ago, that maybe the motels were some of the hardest hit," said Sorensen. "But I think it would be hard for us to say that today."

The difficulties experienced by motels came as something of a shock. Hank Ise, SBA's assistant district director for finance and investment, said at one time the SBA had 85 motel loans across the state. "We used to sit here thinking that was the best type of financing in the world," he said, "because you had strong cash flow, you had a fixed asset that wasn't going to leave, and you always had a good market to sell into if anything went wrong. What we didn't realize was when the oil industry cut back and the oil people stopped traveling the impact that would have in the motel industry."

The SBA does not actually lend money directly, but rather, provides loan guarantees through participating banks. For years, the SBA has been battling the stereotype of "lender-of-last-resort."

"It's a myth," said Ise. "Ninety-nine percent or better of our loans are made through participating banks. We have the same lending criteria as any bank. The only thing we offer is a longer term financing than the banks are able to because of their liquidity problem. A bank's money is short-term money, and they are reluctant to get all their short-term money in long-term loans. They use the SBA for that liquidity."

The liquidity of SBA guarantees is of special concern in a rural state such as Wyoming.

"In New York City," said Nemetz, "(former Budget Director) David Stockman was right. The contribution of SBA was probably so little compared to Chase Manhattan's of Chemical's total lending within the state of New York it wouldn't be worth mentioning. These little banks out here don't have those resources, they

don't have $500,000 to put down for a new building at 20-year term. That's not their job. So the only way they can do it is if they get this guarantee."

The banks, in turn, are able to sell the guaranteed portions of SBA loans to secondary markets. On a $100,000 loan, for example, the SBA would guarantee $90,000. The $90,000 then would become liquid and could be sold to a secondary market. In effect, the $90,000 would come back to the bank and could be used as leverage for making additional loans. In Wyoming, the State of Wyoming under the Small Business Assistance Act and the State Retirement System are secondary markets, along with a national secondary market.

The SBA can guarantee loans of up to $500,000. Larger loans, however, can also be arranged through participating banks, with the bank assuming the risk for the amount over $500,000. Repayment terms of SBA loans are up to 25 years on new construction, and up to 10 years on machinery and equipment.

While collateral is a consideration in making an SBA loan, the chief emphasis is on "repayment ability," according to SBA officials. First, the SBA reviews the applicant's qualifications to start the business in question. Second, the SBA will review how an applicant intends to capitalize the proposed business, and to determine how much equity the applicant intends to contribute at the outset. Then projected earnings and cash flow are determined. Last, the SBA investigates security on the loan. In general, the SBA has been making few debt-refunding and working capital loans.

"We're looking at banking philosophy in our loans," said Ise. "When we make a loan, we expect to be repaid. So we're not in the grant business and we're not giving away money. What we're talking about is 'cash-flow lending'. Many times, if we make strictly a collateral loan, you don't know if you're helping the individual or not. But cash-flow lending is based upon repayment ability. It's a much better way to make loans than strictly on collateral."

Ise said many people who want to get into business are unprepared. Those with inadequate business plans are screened out. Ise said of every 100 applications received by the SBA, perhaps 50 are sent back to the banks because the applicants are not adequately secured or do not have adequate management ability.

With the advent of the Gramm-Rudman-Hollings budget-balancing measure, and with the federal budget cuts the measure will entail, the future of the SBA is in doubt. At their extreme, the cuts could mean the end of the SBA. While the future is in doubt, however, SBA officials argued that the record in Wyoming is clear: The SBA has been a significant force in the growth and proliferation of the state's small businesses.

"If you did your research in Laramie, in Cheyenne, in Cody, in any place in the state," said Sorensen, "and you took out every business in that town that had or has an SBA loan, there'd be a lot of vacant lots."

SBA officials estimated that from 1953 through 1984, about 6,500 total SBA loans had been made to Wyoming businesses. Currently, approximately 7 percent of the businesses in Wyoming have SBA loans.

In addition, the state is permitted to invest state funds buying government guarantees through the Wyoming Small Business Assistance Act. In effect, the state is then able to subsidize interest rates on money lent to small businesses. Without the involvement of the SBA in the program, Nemetz estimated that 1,000 jobs would not have been retained or created during the last fiscal year.

SBA officials don't expect any big turnaround in the near-term business climate. Those businesses with the best chances of success will run lean and work smart. With much talk about future economic development, however, the SBA officials detected a new appreciation of the part small businesses play in the state's economy. Because of the reverses suffered by the state's basic industries, small businesses have come more prominently to the fore.

"I don't know that you're going to see anything spectacular happen in the economy of the small business community," said Nemetz. But, he added, "The wheels certainly won't stop turning."

S.T. Mast, IPR

# #

Survey Reveals Small Business Needs

Recent statistics published by the Small Business Administration (SBA) indicate a slowdown in the growth of the small business sector in Wyoming. For example, in 1984, Wyoming ranked 47th among the states in business formation, with 1,069 new incorporations. This was an 8.7 percent decrease compared to the 1983 level.

While these statistics are useful in pointing out that a problem does exist among small businesses in the state, they are not successful in pointing out the specific needs of Wyoming's small business owners; that is, they do not indicate what needs to be done to change the situation. It is only through the assessment of these needs that educational programs and other methods can be developed to aid in the strengthening of small business in the state.

The Small Business Administration (SBA) and the Wyoming Business Development Center (WBDC), in cooperation with the University of Wyoming, recently asked a random sample of small business owners in the state to help with this urgent task. A questionnaire was administered in November 1985 and January 1986 to find out what the small business community as a whole felt was needed to remain a vital component of Wyoming's economy. In addition to a needs survey, the questionnaire included questions concerning computer usage, as well as questions designed to provide a general background of those businesspeople that responded. This article highlights the tabulation of responses to the needs portion of the survey.

Caution should be exercised in analyzing the results of this questionnaire. Because only 17.4 percent of those businesspeople questioned responded to the survey, the sample may not be representative of the total population; the sample size is not large enough to safely draw significant conclusions. The results can be used, however, as a guideline towards understanding the needs of small business owners in Wyoming.

RESPONDENT CHARACTERISTICS

Respondent demographics indicate that the typical respondent was male, white, and between the ages of 35 to 45. Specific age segments were almost equally represented, however: 31 percent of the respondents were between the ages of 35 to 45, 27 percent fell into the 45 to 55 age bracket, 24 percent were between 25 to 35 years of age, while the remaining 17 percent were over 55.

Further analysis of the questionnaires indicates that 71 percent of the respondents are the owners of their present business and that 20 percent act as manager. In preparation for their current status in business, 40 percent of the respondents had received a college degree, while 24 percent had attended college three years or less. Of those who attended college, business (36 percent), engineering (14 percent), and the sciences (13 percent) were the most popular areas of study. A majority (53 percent) of the businesspeople who responded have also received other types of formal education or informal training that they feel has helped them in running their business. Seminars/workshops and experience were the most frequently listed.

A profile of businesses that were represented indicates that the survey was successful in reaching the small business sector in all areas of Wyoming. While 37 percent of the businesses were located in central Wyoming, 25 percent were based in southeast Wyoming, 24 percent in the northeast section of the state, 16 percent in northwest Wyoming, and 13 percent in southwest Wyoming. Only 5.3 percent of those responding indicated that their business had a staff of over 100 employees; 74.6 percent employ 24 or less, while the remaining 20.1 percent employ between 25 to 100. In 70 percent of the businesses, less than 20 percent of the payroll is comprised of part-time labor. It was indicated by 60 percent that this payroll percentage has not changed within the past three years.

Responses to questions related to the amount of revenue generated, business expenses, and the competitive atmosphere of the business add to the business profile. Thirty-three percent of the businesses estimated an annual revenue of less than $250,000. The other income brackets were more equally represented: $250,000 to $500,000 (14.4 percent); $500,000 to $1 million (16.2 percent); $1 million to $2 million (10.8 percent); $2 million to $5 million (13.5 percent); and over $5 million (11.7 percent). Labor, inventory, rent (mortgage), loan interest, and loan principal were considered to be the largest business expenses. Labor was ranked as the largest expense by 56.1 percent of the respondents; inventory was listed as the largest expense by 19.3 percent of the respondents. Finally, a highly competitive atmosphere is characteristic of 77.2 percent of the businesses represented by the survey.

It is encouraging to note that 61.6 percent of the businesspeople have considered expanding their business within the last year.

MAJOR BUSINESS NEEDS

Table 4 displays the major business needs by type of industry. The trade industry (wholesale and retail trade) was the most heavily represented, followed by manufacturing, construction, and personal/consulting services. The other types of industries indicated were agriculture and mining.

The table shows that responses to the various categories of needs were equally distributed. Financial needs--which include cash flow and financial management, tax planning, preparing venture capital/loan proposals, and collection procedures--were noted by 13 percent

of the businesspeople who responded to the needs survey portion of the questionnaire. Cash flow and financial management was the largest need within this category.

Marketing/advertising was the second largest business need among all businesses. Within this category, the following topics were indicated: Media and strategies (48 percent), pricing (14 percent), and promotion (13 percent).

Management, marked by 10.4 percent of the respondents, included concerns such as inventory planning and control, time, personnel, stress, and communications (listed in order of frequency of response).

Concerns related to starting a business received the lowest number of responses (6.7 percent). This is not surprising considering the fact that the average number of years the respondents have been actively associated with their present businesses is 17.2 years.

When in need of advice on managerial problems, 26.9 percent indicated that they turn to an accountant; lawyers (28.3 percent) and bankers (17.2 percent) were also listed as frequent business advisors. Membership in professional organizations (i.e., trade organizations, chambers of commerce, Kiwanis, Rotary, etc.) was seen as providing additional support in the operation of a business.

It was expressed by 71 percent of the respondents that more could be done by the federal and state government to help the small businessperson. The most popular suggestion was to lower taxes. Services that respondents would like to see offered by the University of Wyoming were also noted.

The three organizations which sponsored this survey are each sources of business counseling and assistance to Wyoming small businesspeople. At the University of Wyoming, the Small Business Institute (a program under the auspices of the Small Business Administration and within the Institute of Business Management Services at UW) coordinates semester-long projects throughout the state, matching small businesses with upper level business students and faculty in UW's College of Commerce and Industry. Projects have included management audits, personnel problems, market studies, relocation site studies, customer surveys...the list goes on and is only limited by the client's needs.

On March 11, 1985, the Wyoming Business Development Center (WBDC) opened its doors on the Casper College campus to offer free counseling assistance, business seminars and classes, and management assistance publications to Wyoming's small businesses. In August of 1985, the WBDC program received funding from the SBA to enlarge the program and develop eight "sub-centers" across the state of Wyoming. In addition, the Small Business Administration currently operates a variety of business assistance programs, primarily in the form of low interest or guaranteed loans.

There are plans to conduct a survey similar to the one discussed on a periodic basis so that the needs of the small businessperson can be monitored. The results obtained from the present survey indicate that this is a necessary step in the strengthening of small business in Wyoming.

[NOTE: A copy of the final report can be obtained by writing to: Institute of Business and Management Services, University of Wyoming, Box 3275, Laramie, Wyoming 82071]

Ruth Tebbutt, IPR, and Mike Michalek, Graduate Student

# #

Table 4: Major Business Needs by Type of Industry (% of Responses).

	Trade	Personal/Consulting Services	Manufacturing	Construction	Other[1]	Total[2]
Financial	9.95	12.82	18.75	9.67	17.18	13.00
Marketing/ Advertising	10.44	12.82	9.37	16.12	11.71	11.10
Management	10.44	15.38	9.37	12.90	8.59	10.40
Accounting	10.44	12.82	3.12	9.67	8.59	9.30
Business Plans	9.45	5.12	12.50	6.45	10.15	9.30
Legal	10.44	7.69	6.25	0	10.15	8.80
Personnel	9.45	7.69	15.62	9.67	6.25	8.80
Trends	8.95	2.56	3.12	12.90	8.59	8.60
Computers	6.46	10.25	6.25	6.45	7.03	7.00
Retailing	7.96	5.12	6.25	6.45	6.25	7.00
Starting a Business	7.46	7.69	3.12	9.67	5.46	6.70
TOTAL[3]	46.63	9.05	7.43	7.20	29.69	100.00

[1]Other industries represented include agriculture and mining.
[2]Percentage of total respondents listing this need.
[3]Percentage of total respondents within this industry who responded to the needs section of the survey.

IPR Devises County Personal Income Index

The Census Retrieval and Information Service (CRIS) has developed a quarterly County Personal Income Index as an indicator of current economic activity in Wyoming counties. The index is based on Bureau of Economic Analysis (BEA) current estimates of quarterly state personal income, BEA estimates of yearly county personal income, and changes in both current sales tax and employment data.

The County Personal Income Index is an estimate of total personal income, less transfer payments, without inflation adjustment. Transfer payments are income payments to persons for which they do not render current services, such as insurance benefits, retirement income, unemployment compensation, and welfare.

The County Personal Income Index for the fourth quarter of 1984 and the first quarter of 1985 is presented in the accompanying table, along with the percent change in the index between these quarters. The relatively high increase in the index for Lincoln County (3.2 percent) was due mostly to rising sales during this period. Increases in sales were also responsible for Sublette County's rise in the index (2.1 percent). On the other hand, the estimated increase in the index for both Platte and Uinta counties (2.5 and 1.3 percent, respectively) was caused by increases in employment, offsetting a drop in sales.

The estimated decreases in Niobrara and Sheridan counties (2.3 and 1.2 percent, respectively) came from decreases in both employment and sales, with the drop in sales being more influential in Niobrara County and the drop in employment the more important factor in Sheridan County. In Fremont County, the drop in employment outweighed an increase in sales, leading to an estimated 1.0 percent decrease.

Both Natrona and Albany counties had a 0.3 percent increase, the same as that for the state, with the influence of increased employment deflated by the effect of decreased sales. Laramie County's increase of 0.9 percent was due to an increase in employment.

Judy Denison and G. Fred Doll,
CRIS/IPR

# #

Table 5: Quarterly County Personal Income Index, Wyoming (Estimated Personal Income Less Transfer Payments, in Dollars, Seasonally Adjusted at Annual Rates).*

	1984/4	1985/1	Percent Change
Wyoming	($) 5,915,000	($) 5,934,000	0.3
Natrona	1,123,000	1,127,000	0.3
Laramie	897,000	906,000	0.9
Sheridan	327,000	323,000	-1.2
Sweetwater	523,000	524,000	0.2
Albany	310,000	310,000	0.3
Carbon	227,000	227,000	-0.1
Goshen	108,000	109,000	0.3
Platte	77,000	78,000	2.5
Big Horn	96,000	95,000	-0.6
Fremont	356,000	353,000	-1.0
Park	283,000	282,000	-.2
Lincoln	143,000	147,000	3.2
Converse	148,000	149,000	0.7
Niobrara	34,000	33,000	-2.3
Hot Springs	64,000	64,000	0.1
Johnson	76,000	76,000	-0.6
Campbell	409,000	412,000	0.9
Crook	63,000	63,000	-0.3
Uinta	225,000	228,000	1.3
Washakie	110,000	111,000	0.7
Weston	97,000	97,000	0.1
Teton	161,000	161,000	-0.4
Sublette	58,000	59,000	2.1

*The County Personal Income Index has been rounded to the nearest thousand dollars.

Quarterly data for the state are obtained from the Bureau of Economic Analysis (BEA). Quarterly county data are estimates derived by the Census Retrieval and Information Service (CRIS) at the Institute for Policy Research, University of Wyoming.

ECONOMIC CHANGES

ECONOMIC CHANGES

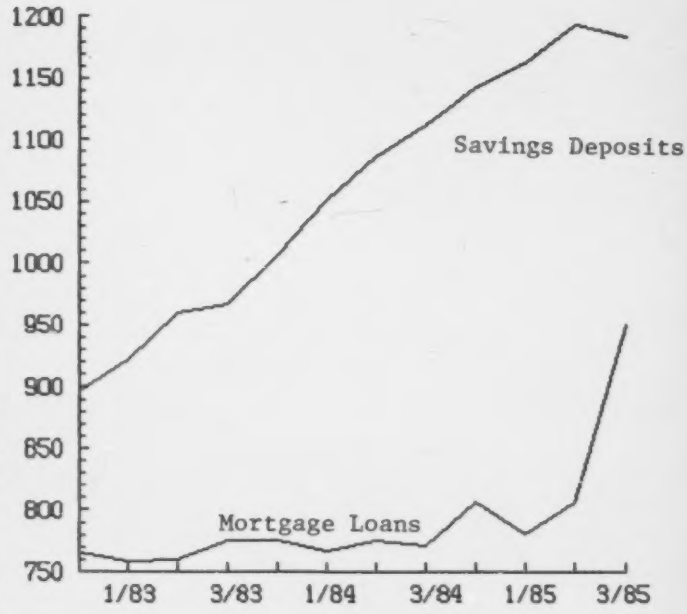
(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred, or in which existing trends were significantly accentuated, during the latest reporting period.)

Changes in banking and finance, and business-related statistics are among the highlights recorded in the Update's third quarter 1985 statistics.

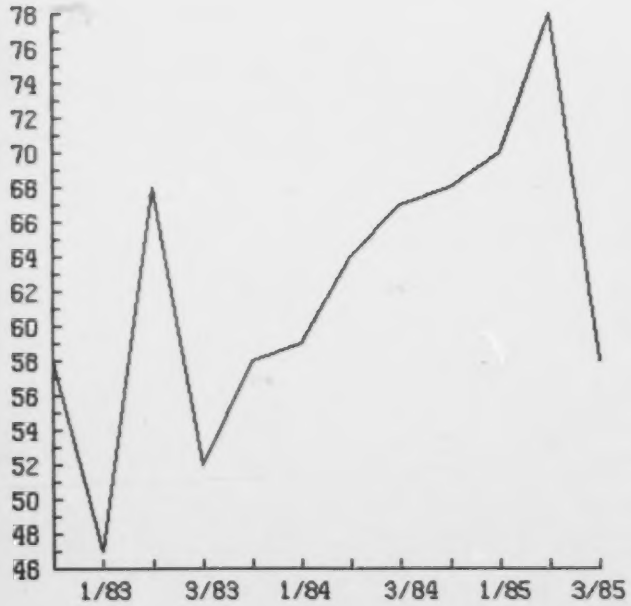
Savings and loan deposits dropped for the first time during the Update's 12-quarter reporting period in the third quarter. Total deposits dropped to $1,183,564,000 during the period, down from $1,193,339,000 during the second quarter. At the same time, savings and loan mortgage loans among member institutions of the Federal Home Loan Bank of Seattle increased sharply to $949,722,000, up from $806,897,000 registered during the second quarter of 1985. It was the highest level attained during the Update's 12-quarter reporting period.

Personal bankruptcies also rose to a new high during the Update's 12-quarter reporting period, after posting an increase during the second quarter. Personal bankruptcies totaled 229 during the third quarter, up from 204 during the second quarter and up from 169 during the third quarter of 1984. At the same time, however, the number of business failures decreased to 58, down from 78 during the second quarter. The number of business failures reached its lowest level since 58 business failures were recorded during the fourth quarter of 1983.

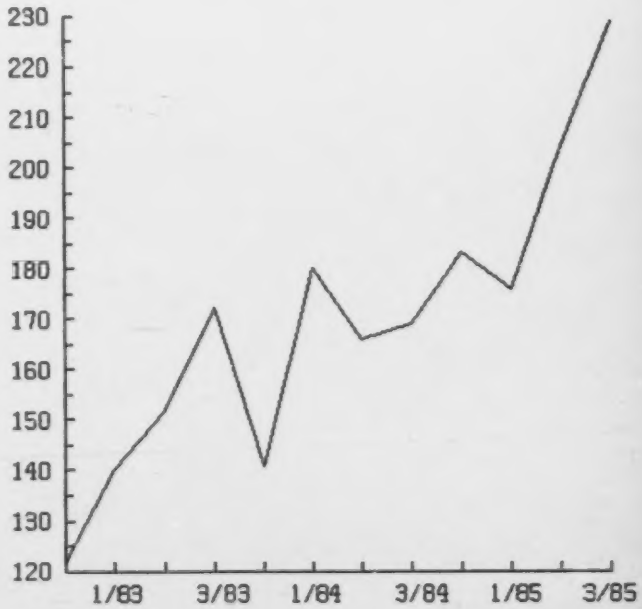
Savings and Loan Data



Business Failures



Personal Bankruptcies



WYOMING DATA

Table 6: Agriculture[1]

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. Timber Cut in Wyoming National Forests (MBF)	26318.	14707.	5208.	35941.	47574.	21261.	7625.	48671.	63055.	23591.	6564.	35705.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	244.	247.	254.	280.	280.	269.	265.	254.	258.	253.	260.	256.
3. Wyoming Crops, Prices Received-Average	243.	246.	253.	268.	279.	270.	270.	255.	260.	256.	259.	260.
4. U.S. Crops, Prices Received-Latest	220.	234.	239.	260.	262.	267.	276.	260.	240.	242.	236.	216.
5. U.S. Crops, Prices Received-Average	221.	226.	244.	255.	258.	266.	275.	271.	253.	240.	239.	224.
6. Wyoming, All Commodities, Prices Received-Latest	225.	261.	246.	239.	244.	252.	242.	254.	251.	265.	243.	242.
7. Wyoming, All Commodities, Prices Received-Average	234.	249.	253.	233.	239.	251.	250.	246.	252.	256.	253.	237.
8. U.S., All Commodities, Prices Received-Latest	232.	245.	243.	248.	256.	265.	262.	252.	245.	244.	235.	219.
9. U.S., All Commodities, Prices Received-Average	234.	240.	247.	247.	249.	264.	264.	259.	249.	246.	237.	225.
10. Wyoming Livestock, Prices Received-Latest	219.	265.	244.	227.	233.	247.	235.	254.	248.	268.	238.	238.
11. Wyoming Livestock, Prices Received-Average	231.	249.	253.	223.	228.	245.	243.	244.	250.	256.	250.	230.
12. U.S. Livestock, Prices Received-Latest	243.	256.	247.	240.	251.	264.	251.	247.	251.	247.	235.	222.
13. U.S. Livestock, Prices Received-Average	245.	253.	251.	242.	241.	264.	256.	251.	247.	251.	236.	227.
14. Prices Paid by U.S. Farmers-Latest	315.	321.	324.	326.	328.	335.	335.	333.	332.	332.	332.	328.
15. Prices Paid by U.S. Farmers-Average	315.	320.	324.	325.	327.	333.	336.	334.	332.	332.	332.	329.

[1]First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2]The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 7: Banking and Finance

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. Total Bank Loans and Leases Financing Receivables (T$)[1]	*****	*****	*****	*****	*****	2313197.	2359492.	2368731.	2352704.	2356267.	2348277.	2296857.
2. Total Bank Deposits (T$)	3587554.	3537206.	3669552.	3683748.	3789387.	3747828.	3812354.	3790977.	4005456.	3808654.	3908435.	3959810.
3. Total Non Interest-Bearing Deposits (T$)[1]	*****	*****	*****	*****	*****	657189.	734297.	723344.	742392.	652223.	643908.	687128.
4. Savings and Loan Mortgage Loans (T$)[2]	765708.	758938.	760041.	775159.	775795.	767125.	775396.	771560.	806660.	780644.	806897.	949722.
5. Savings and Loan Deposits (T$)	895889.	921290.	960250.	966113.	1006927.	1051271.	1087036.	1111213.	1142593.	1161848.	1193339.	1183564.
6. Prime Interest Rate[3]	11.50	10.50	10.50	11.00	11.00	11.21	12.60	12.97	11.06	10.50	9.78 -	9.50

[1]During the first quarter of 1984, the Wyoming State Bank Examiner began publishing it's quarterly report ("The Abstract Report of State and National Banks in Wyoming") in a slightly different format. IPR will therefore be altering the following banking and finance data series: total bank loans and total demand deposits. Beginning in the first quarter of 1984, data for total bank loans will include lease financing receivables; data for total bank demand deposits will be replaced by figures for noninterest-bearing deposits. For comparison, the reader can refer to past issues of the WQU.
[2]Only members of the Federal Home Loan Bank Board are included.
[3]Rate is for the last month of the quarter.

Sources: Series 1-3: Wyoming State Bank Examiner Quarterly Report.
Series 4 and 5: Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

Table 8: Business Conditions

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. New Domestic Corporations	377.	348.	410.	366.	309.	359.	359.	332.	273.	308.	307.	248.
2. New Foreign Corporations	272.	240.	259.	331.	292.	260.	249.	259.	244.	224.	259.	279.
3. Total New Corporations	649.	588.	669.	697.	601.	619.	608.	591.	517.	532.	566.	527.
4. Business Failures	58.	47.	68.	52.	58.	59.	64.	67.	68.	70.	78.	58.
5. Value of Business Failures ($)	-6860186.[1]	6438421.	6400333.	535473.	-8163171.[1]	17789116.	14081414.	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]
6. Personal Bankruptcies	122.	140.	152.	172.	141.	180.	166.	169.	183.	176.	204.	229.

[1]Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 9: Construction

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. New Residential Dwelling Units	689.	727.	1044.	1002.	685.	481.	935.	642.	426.	397.	670.	628.
2. Value of Residential Dwellings Constructed (M$)	41.9	44.4	70.7	60.3	40.0	28.4	54.4	37.9	26.9	25.3	46.8	42.3
3. Value of Nonresidential Construction (M$)	35.2	37.9	54.4	48.2	59.9	11.5	30.6	36.9	79.0	31.7	75.8	32.1
4. Building Permits Issued in Selected Wyoming Cities	2803.	2762.	3586.	3701.	2138.	2025.	3892.	3546.	2438.	1713.	3315.	3753.
5. Value of Authorized Construction (T$)	34470.	37119.	46402.	68715.	51924.	29471.	42320.	36344.	35282.	23474.	83920.	193451.
6. Mortgage Interest Rate[1]	13.09	12.97	11.90	12.08	11.94	11.56	11.61	12.03	12.05	11.42	11.31	10.69

[1]Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 10: Consumers

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. New Truck Registrations	3230.	3233.	3415.	3417.	4363.	3927.	4418.	4102.	4574.	3581.	4052.	5187.
2. New Car Registrations	3610.	3272.	3539.	3671.	3483.	3083.	3741.	3676.	3397.	3012.	3752.	4868.
3. Wyoming Personal Income[1] (M$)	6047.	5967.	5933.	6004.	6114.	6066.	6176.	6370.	6394.	6361.	6545.	INA
4. US Disposable Income (B$)	2238.	2261.	2303.	2367.	2429.	2502.	2554.	2606.	2645.	2655.	2726.	2713.
5. US Personal Income[1] (M$)	2630032.	2651169.	2704449.	2755421.	2832277.	2921828.	2989330.	3057274.	3112603.	3159817.	3190683.	INA
6. Latest US Consumer[2] Price Index (1967=100)	292.0	293.0	297.2	300.8	301.5	303.3	306.2	312.1	312.2	315.3	318.7	320.5
7. Quarter's Average US CPI	292.9	292.5	296.1	299.5	301.4	303.1	305.2	310.0	312.1	313.9	317.7	319.7
8. Liquor Sales (T$)	10464.	7102.	7868.	8455.	9863.	6622.	7478.	8180.	9554.	6360.	7538.	8931.

[1]Revised series. Business Week, the previous source for monthly personal income for Wyoming and the U.S., has discontinued its series. Personal income data will subsequently be collected from the Bureau of Economic Analysis, U.S. Department of Commerce. Readers should be cautioned that the two series are not comparable.

[2]Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 11: Employment and Labor[1]

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. Civilian Labor Force	251909.	250258.	267248.	273592.	256902.	249794.	261676.	261271.	253243.	241636.	258670.	256138.
2. Employment	233790.	225488.	242087.	253149.	239275.	230633.	245871.	248480.	238710.	223271.	241601.	240889.
3. Unemployment	18120.	24770.	25161.	20443.	17627.	19160.	15805.	12791.	14533.	18366.	17069.	15249.
4. Unemployment Rate	7.2	9.9	9.4	7.5	6.9	7.7	6.0	4.9	5.7	7.6	6.6	6.0
5. Initial Claims Filed	14183.	15650.	10951.	8657.	11117.	10502.	7271.	5255.	8237.	13595.	8047.	6991.
6. Applications Received	13102.	12970.	11787.	12144.	9359.	10290.	11541.	11375.	9685.	11106.	12017.	11424.
7. New Non-Agricultural Openings	7035.	4724.	6185.	7992.	5528.	4679.	9779.	12905.	8655.	7004.	11450.	12640.
8. New Non-Agricultural Placements	5450.	4106.	6608.	10529.	6446.	5946.	9111.	10348.	8331.	6308.	9597.	9656.
9. Miners' Average Weekly Hours	38.1	39.9	39.5	41.8	41.2	42.8	43.2	42.9	43.7	42.4	43.9	43.3
10. Miners' Average Weekly Pay ($)	464.35	490.14	490.96	521.24	519.71	547.39	558.70	552.01	570.24	573.82	591.61	574.69
11. Miners' Average Hourly Wage ($)	12.18	12.27	12.43	12.47	12.60	12.78	12.94	12.87	13.05	13.54	13.47	13.27

[1]The most recent year's data are preliminary.
Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published quarterly.

Table 12: Energy and Mineral Production

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. Wyoming Coal (TST)	26054.	25400.	24746.	29784.	27401.	32020.	28964.	31806.	33619.	34566.	31608.	32228.
2. U.S. Coal (TST)	189307.	190260.	180439.	204117.	198085.	227129.	223657.	246163.	188116.	220595.	220203.	225484.
3. Wyoming Oil (TBPD)	324.	321.	311.	325.	318.	311.	325.	350.	333.	325.	327.	337.
4. U.S. Oil (TBPD)	8679.	8679.	8658.	8680.	8700.	8737.	8831.	8879.	8855.	8860.	8857.	8901.
5. Wyoming Natural Gas (MCFD)	1306.	1172.	1269.	1050.	1373.	1348.	1255.	1229.	1369.	1513.	1449.	INA
6. U.S. Natural Gas (MCFD)	48335.	47683.	43073.	44703.	48924.	52238.	48581.	47802.	49601.	50748.	46718.	INA

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas data are published monthly, and coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.

Table 13: Government

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. Sales and Use Tax Collections (T$)	61208.	56909.	46453.	53361.	55424.	55954.	51151.	57132.	59570.	54966.	50917.	63025.
2. Violent Crime[1]	295.	301.	274.	409.	241.	221.	318.	350.	334.	304.	275.	350.
3. Nonviolent Crime[2]	5093.	4802.	4821.	5319.	4219.	3728.	4486.	4790.	4170.	4170.	4969.	5120.
4. Stolen Property (T$)	2963.	3176.	2918.	3005.	2892.	2065.	2627.	2856.	2487.	2244.	2437.	3443.
5. Stolen Property Recovery Rate	42.8	46.5	36.9	40.3	46.1	42.7	42.9	51.5	45.5	51.9	38.5	51.6
6. Percent of Crimes Cleared[3]	21.3	22.8	21.8	24.2	23.5	30.9	22.4	22.9	30.7	28.3	24.0	25.1

[1] Murder, negligent homicide, forcible rape, robbery, aggravated assault.
[2] Burglary, larceny, auto theft.
[3] Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.
Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 14: Tourism

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
Visitors, National Parks and Monuments												
1. Yellowstone	116082.	65368.	553986.	1653211.	133088.	63927.	536765.	1561475.	100802.	66776.	592059.	1500133.
2. Grand Teton	371007.	183675.	686326.	1462761.	238442.	136459.	522640.	1373523.	206891.	130583.	517614.	1299635.
3. Devil's Tower	13232.	8912.	87506.	160953.	16894.	9037.	72461.	131447.	15145.	8841.	68885.	135061.
4. Fossil Butte	1601.	626.	5134.	9120.	4206.	246.	4246.	9107.	1762.	115.	4254.	10434.
5. Fort Laramie	6906.	4887.	28311.	56592.	7665.	2352.	27529.	54704.	5527.	2625.	26185.	49165.
6. Big Horn NRA-South[1]	30720.	13428.	44977.	56419.	29358.	18715.	45104.	67403.	26388.	31533.	56612.	77495.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	97892.	84187.	122665.	167385.	97696.	85780.	125371.	169579.	101625.	88135.	131520.	166903.
8. Hotel, Motel, and Camp Sales Tax (T$)	1323.	912.	1048.	2017.	1397.	979.	1084.	2178.	1389.	932.	574.[2]	INA
9. Gasoline Sales (TGL)	81347.	71330.	81160.	107116.	79911.	63980.	85891.	102748.	77108.	66798.	83529.	101676.

[1]Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.
[2]Represents April and May data. Data for subsequent months will not be available until the beginning of 1986.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation monthly report.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 15: Utilities[1]

Calendar Quarters	4/82	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85
1. Residential Electric Connections	177968.	179111.	179717.	178762.	178535.	179967.	179536.	178837.	179123.	179451.	181034.	179423.
2. Residential Electric Consumption (TKWH)	391608.	489892.	392223.	294755.	395182.	562483.	437086.	359496.	484523.	542962.	395900.	348469.
3. Commercial Electric Connections	30388.	30772.	31194.	30533.	31404.	32340.	32462.	32874.	32738.	33058.	33730.	33782.
4. Commercial Electric Consumption (TKWH)	327961.	351633.	327565.	353743.	342219.	485953.	437983.	455181.	468378.	504376.	474481.	497271.
5. Industrial Electric Connections	3751.	3647.	3667.	3655.	3624.	3119.	3150.	3122.	3059.	2957.	2926.	2933.
6. Industrial Electric Consumption (TKWH)	1225845.	1471528.	1388817.	1397176.	1016334.	1456749.	1911229.	2049121.	2479998.	1572877.	1904448.	2159299.
7. Other Connections[2]	2857.	2819.	3059.	3164.	2791.	2759.	3155.	3438.	3165.	2916.	3145.	3219.
8. Other Consumption (TKWH)	12240.	6780.	8710.	46427.	13306.	6129.	13775.	50031.	10385.	5321.	19238.	57385.
9. Residential Natural Gas Connections	75955.	76567.	76449.	74638.	75037.	76263.	75081.	74802.	75736.	76112.	75456.	74772.
10. Residential Natural Gas Consumption (MCF)	2972244.	6531664.	8926691.	2871311.	8444801.	15230399.	8356402.	2804867.	9293855.	14912809.	6892581.	2723293.
11. Commercial Natural Gas Connections[3]	6476.	6873.	6869.	6710.	6817.	6881.	6817.	6770.	6859.	6882.	6785.	6651.
12. Commercial Natural Gas Consumption (MCF)[3]	1196763.	3667569.	5716746.	1792146.	4865053.	9496853.	5231096.	1656779.	5481602.	9319095.	4495896.	1640628.
13. Industrial Natural Gas Connections	95.	97.	97.	97.	98.	94.	95.	96.	93.	91.	92.	96.
14. Industrial Natural Gas Consumption (MCF)	7918440.	7626560.	10221456.	9291988.	13201149.	13193998.	25099377.	12505089.	26405131.	9633325.	12378588.	6370238.
15. Other Natural Gas Connections[3]	409.	48.	48.	46.	45.	45.	46.	46.	46.	46.	47.	42.
16. Other Natural Gas Consumption (MCF)[3]	138389.	176.	322.	5323.	267.	235.	905.	5882.	336.	138.	1739.	8033.

[1]Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.
[2]"Other" includes agriculture, municipal, and other public.
[3]Figures for the first and second quarter of 1983 reflect a change in the authority connections/consumption made by the Northern Utilities. Prior to January 1983, the company listed public authority under the category of other natural gas connections/consumption. Northern Gas now combines public authority connections/consumption with their commercial natural gas connections/consumption.

NOTE: Due to divestiture, Mountain Bell is no longer able to provide IPR with the telephones in service figure; because Mountain Bell accounts for the bulk of telephone mainline service in Wyoming, IPR has decided to discontinue the telephone data series.

Sources: Series 1-18: Reports to IPR by selected electric, natural gas, and telephone utility companies. Survey conducted monthly.

Wyoming Comparative Cost of Living Index* (October 2-4, 1985): Statewide Average = 100

City	Rank	All Items	Food	Housing	Transportation	Medical
Jackson	1	110.18	99.39	125.03	101.72	99.83
Evanston	2	110.09	96.17	129.96	103.36	99.70
Gillette	3	108.93	99.70	122.00	101.77	106.41
Rock Springs	4	108.80	102.55	120.13	101.95	99.63
Kemmerer	5	105.98	99.82	114.33	99.28	103.44
Pinedale	6	102.62	102.43	106.64	98.43	99.03
Sundance	7	102.48	111.78	104.09	94.52	102.49
Casper	8	100.74	96.95	100.39	105.42	103.51
Cody	9	100.28	104.14	99.30	99.12	100.20
Cheyenne	10	100.13	96.87	101.58	102.84	98.33
Sheridan	11	99.41	102.44	95.89	99.49	99.64
Worland	12	99.40	104.39	96.93	97.70	105.70
Laramie	13	99.34	98.53	100.95	98.36	96.08
Wheatland	14	97.98	98.67	95.35	99.91	99.89
Riverton	15	96.57	99.50	92.09	101.06	100.73
Douglas	16	96.12	97.35	88.33	101.17	101.59
Buffalo	17	96.10	104.13	87.63	99.08	98.35
Greybull	18	95.81	99.36	90.04	98.28	101.73
Thermopolis	19	95.40	101.77	87.49	99.44	98.15
Newcastle	20	95.31	100.86	87.69	96.79	103.16
Lusk	21	95.08	97.07	84.09	104.37	97.21
Rawlins	22	92.26	95,09	87.13	99.44	92.03
Torrington	23	90.99	91.05	82.95	96.52	93.16

*Apparel and Recreation Indices not shown.

Source: Wyoming Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 4th quarter of 1982, and end with the 3rd quarter of 1985. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Most annual data series will reappear in WQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronymn "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet

TKWH - Thousand Kilowatt Hours

$ - Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

T$ - Thousands of Dollars

H$ - Hundreds of Dollars

ST - Short Tons

TST - Thousands of Short Tons

MCFD - Million Cubic Feet Per Day

TBPD - Thousands of Barrels Per Day

GL - Gallons

TCF - Thousands of Cubic Feet

KWH - Kilowatt Hours

TGL - Thousands of Gallons

HBBL - Hundreds of Barrels

HMCF - Hundreds of MCF Per Day

HST - Hundreds of Short Tons

$/ST - Dollars Per Short Ton

RECENTLY PUBLISHED WYOMING RELATED RESEARCH REPORTS

A STUDY OF EMPLOYER PREFERRED SKILLS AMONG GRADUATING BUSINESS STUDENTS OF THE UNIVERSITY OF WYOMING by Gary Benson	No Charge
ANALYSIS OF THE LONG-TERM IMPACTS AND BENEFITS OF GRAND TETON NATIONAL PARK ON THE ECONOMY OF TETON COUNTY, WYOMING by John Merrifield and Shelby Gerking	$5.00*
ANALYZING PROPERTY TAX ASSESSMENTS IN WYOMING by Shelby Gerking, Gillian Arnott and Martha Schilling	$4.00*
CHANGING ENERGY PRICES AND ECONOMIC RENTS: THE CASE OF WESTERN COAL by John H. Mutti and William E. Morgan	No Charge
CHANGING FEDERAL-STATE RELATIONS IN WATER RESOURCE PLANNING: THE CASE OF WYOMING by R. McGregor Cawley and Charles Davis	No Charge
DISTRIBUTION OF MOUNTAIN LIONS IN WYOMING AS DETERMINED BY MAIL QUESTIONNAIRE by Richard L. Berg, Lyman L. McDonald and M. Dale Strickland	No Charge
EXPORTATION OF STATE AND LOCAL TAXES: A COMPARATIVE ANALYSIS by Shelby Gerking, William Morgan and John Mutti	$5.00*
FALLING WORLD OIL PRICES AND THE ROLE OF RAILROADS IN THE MARKET FOR WYOMING COAL by Scott E. Atkinson and Joe Kerkvliet	$5.00
SAMPLE SIZES AND CONFIDENCE INTERVALS FOR WILDLIFE POPULATION RATIOS by Ramond L. Czaplewski, Douglas M. Crowe and Lyman L. McDonald	No Charge
SHIFTING, INCIDENCE, AND INTER-STATE EXPORTATION OF PRODUCTION TAXES ON ENERGY RESOURCES by William E. Morgan and John H. Mutti	No Charge
TAX RATES, REVENUES, COAL SALES, AND THE STATE'S WELFARE: WYOMING VS. MONTANA by Scott E. Atkinson	No Charge
THE ECONOMIC IMPACT OF LARAMIE COMMUNITY COLLEGE ON THE ECONOMY OF LARAMIE, COUNTY, WYOMING by Scott E. Atkinson and Joe Kerkvliet	No Charge
THE EXPORTATION OF STATE AND LOCAL TAXES IN A MULTILATERAL FRAMEWORK: THE CASE OF HOUSEHOLD TYPE TAXES by John H. Mutti and William E. Morgan	No Charge
THE WYOMING ECONOMY: HISTORICAL TRENDS AND PROJECTIONS by Shelby Gerking and John Merrifield	No Charge
TRANSPORTATION CHARGES, PRODUCTION TAXES, AND SCRUBBER LEGISLATION: CONSEQUENCES FOR THE WYOMING COAL MARKETS by Scott Atkinson, Joe Kerkvliet, and Paulette Barclay	$2.00*
WYOMING'S NEAR-TERM ECONOMIC OUTLOOK: MODEST GROWTH FOR THE 1980'S by Shelby Gerking, S.T. Mast, Scott Atkinson	$2.00*

*Prices reflect reproduction costs only. In state subject to 3% sales tax.

HOW TO ORDER

Please mail your order together with payment (if necessary) to:

INSTITUTE FOR POLICY RESEARCH
Box 3925, University Station
Laramie, WY 82071
ATTN: Administrative Secretary

Thank You

CRIS

Census Retrieval Information Service

P.O. Box 3925
Laramie, WY 82071
(307) 766-5141

Room 302
Emerson Building
Cheyenne, WY 82002
(307) 777-7504

U.S. Census information for Wyoming is handled by the Census Retrieval and Information Service (CRIS). CRIS issues printed reports of Wyoming Census data as well as handling specific requests. Much of the population and housing data from the 1980 Census is now available.

CRIS reports now available:		PRICE
#82-8:	Age Distribution in Wyoming,1980, August 1982, 120 pages. Analysis of age profiles in 5-year brackets. Wyoming: Comparison with USA and with 1970. Indications of net in-migration by age. Prediction of 1990 peak at ages 30-34. Counties: Maps of age distribution. Graphs of age profiles for each county. Cities: Age profile for each city.	No Charge
#5:	STF1, October 1981, 54 pages. 100% count data, 1980 population and housing: state, counties and cities.	No Charge
#6:	Laramie People Patterns, January 1982, 11 pages. Minority distribution in Laramie by zoning and by age of neighborhood.	No Charge
#83-5	May 1983, 29 pages. Labor in Wyoming, 1980, labor force participation; age of labor force occupations.	No Charge
#84-1	October 1984, 25 pages. Age and Type of Wyoming Housing, 1980, characteristics of single, multiple, and mobile housing units: age, renter-occupancy, vacancy, county growth effects.	No Charge
#84-2	December 1984, 21 pages. Poverty in Wyoming, 1980 Census, numbers and rates of groups of persons in Wyoming with 1979 income under poverty level.	No Charge

CRIS is a cooperative service provided by the Institute for Policy Research, University of Wyoming, and the Research and Statistics Division, Wyoming Department of Administration and Fiscal Control.

We are looking forward to assisting you in the future.

Judy Denison and G. Fred Doll
Institute for Policy Research
University of Wyoming

Phil Kiner
Research and Statistics Division
Department of Administration and
Fiscal Control

Average Rents by City, Third Quarter 1985*

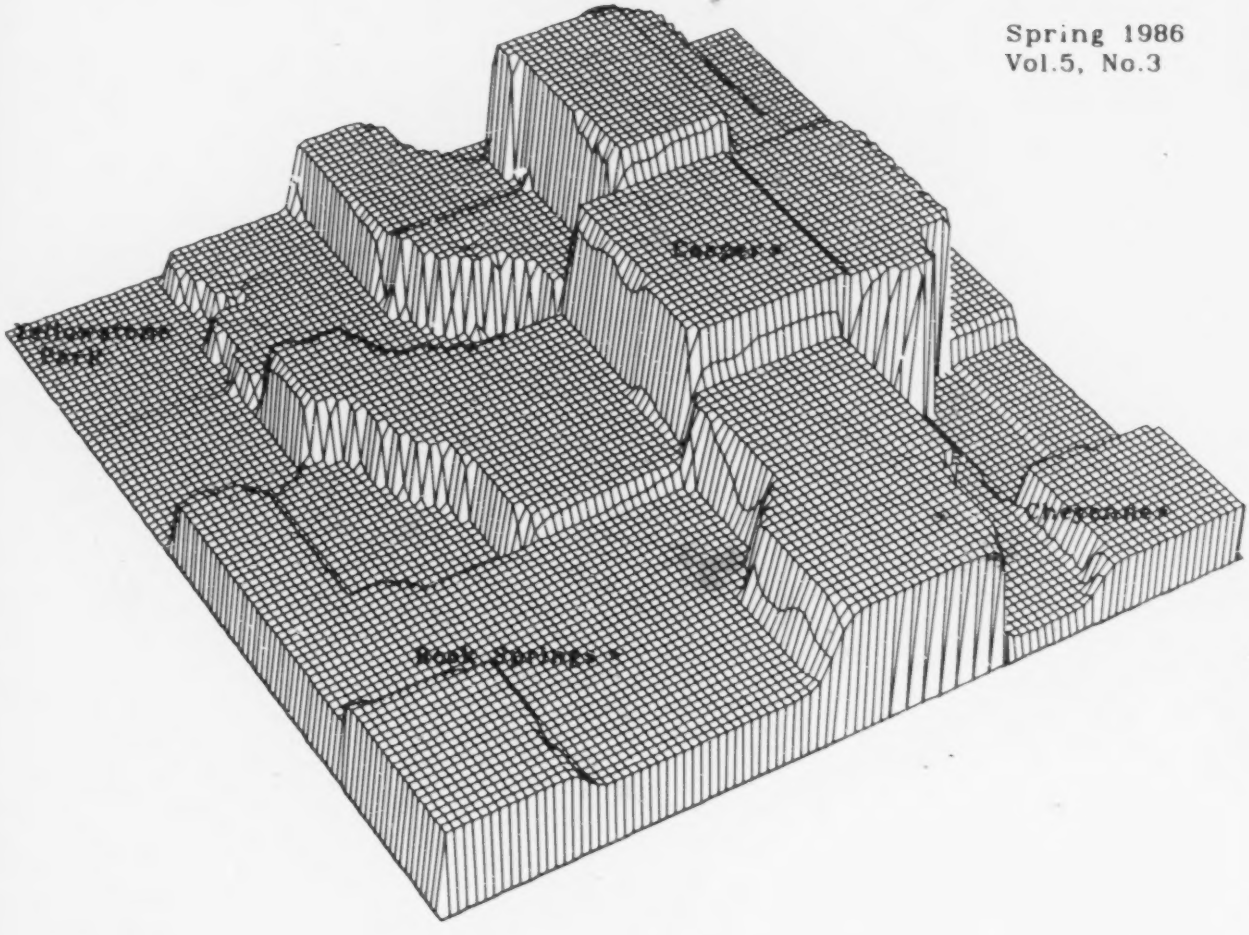
City	Average Apartment Rent	Average Trailer Lot Rent
Cheyenne	318.44	130.00
Buffalo	307.06	105.00
Casper	297.92	140.00
Cody	305.59	117.50
Douglas	299.77	117.50
Evanston	376.41	202.00
Gillette	356.59	177.50
Greybull	230.00	76.50
Jackson	361.67	106.25
Kemmerer	368.12	130.00
Laramie	337.68	125.00
Lusk	227.78	90.00
Newcastle	286.50	97.50
Pinedale	337.50	75.00
Rawlins	279.22	122.50
Riverton	297.34	111.00
Rock Springs	330.00	159.00
Sheridan	312.12	128.75
Sundance	242.50	80.00
Thermopolis	312.33	122.50
Torrington	293.25	57.50
Wheatland	236.00	100.00
Worland	307.33	120.00

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

6/9/86 49350-2

WYOMING QUARTERLY UPDATE

Spring 1986
Vol.5, No.3



IPR

Stock Sheep on Wyoming Farms and Ranches
by County, January 1, 1985

Wyoming Quarterly Update

Wyoming Quarterly Update (WQU) represents the efforts of the Institute for Policy Research (IPR) at the University of Wyoming to provide improved data access services. The data presented in WQU are assembled from secondary sources, such as government agencies and private industry. The staff of IPR greatly appreciates the ongoing, cheerful cooperation of each of the data sources listed in the bibliography.

WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously. Featured for the eighth time in this edition is an industry profile. In this edition, a discussion of Wyoming's sheep industry is presented.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting stock sheep on Wyoming farms and ranches by county on January 1, 1985

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

For additional information, contact WQU editor S.T. Mast at:

The Institute for Policy Research
University Station, Box 3925
Laramie, WY 82071
(307) 766-5141

OTHER IPR SERVICES AND RESEARCH REPORTS ARE LISTED AT THE END OF THIS WQU.

INSTITUTE FOR POLICY RESEARCH
OFFICE OF RESEARCH AND GRADUATE STUDIES
UNIVERSITY OF WYOMING

FRONT MATTER
Introduction....i
Table of Contents....ii

WYOMING SCENE
Overview and Perspective....2
Minerals Outlook....4
Agricultural Outlook....13
Job Openings Outlook....14
Coincident Indicators Index....15

INDUSTRY PROFILE
Background....18
Interview....27
Herders....30
Sheep Breeds....32

ECONOMIC CHANGES
Discussion....34

WYOMING DATA
Agriculture....36
Banking and Finance....37
Business Conditions....38
Construction....39
Consumers....40
Employment and Labor....41
Energy and Mineral Production....42
Government....43
Tourism....44
Utilities....45
Wyoming Cost of Living Index....46
Rent by City....47
Format Description....48
Publications List....49
CRIS Information....50

Editor....S.T. Mast
Editorial Advisors....G. Fred Doll
Scott E. Atkinson
Word Processing....Tracy Moore
Editorial Assistance....Claoma Woodall
Business Coordinator....Patsy Parrott
Research Aide....Ruth Tebbutt
Graphics....Cathy Ryan
UW Graphic Arts Services
Computer Graphics Package

Wyoming Quarterly Update is published four times per year in fall, winter, spring, and summer editions.

The articles appearing in this publication represent the opinions of the authors and do not necessarily reflect the views of the state of Wyoming or the University of Wyoming or their respective executive officers. Duplication or quotation of material in this publication is welcomed, but it is requested that WQU, the Institute of Policy Research, University of Wyoming, be credited.

WYOMING SCENE

Overview and Perspective

The national economy essentially remained on two tracks during the first quarter. On the one hand, industrial output remained sluggish, while on the other, services continued to forge ahead.

Industrial output continued to be the most significant drag on economic performance during the first quarter. An overproduction of autos during the period led to a buildup of inventories. As domestic car sales failed to meet expectations, Detroit looked to reduce production by about 350,000 units during the second quarter. In March, auto production fell by over 11 percent.

Plunging oil prices also led to cutbacks in oil industry activity. Output of petroleum products fell 2.2 percent in March, and the employment picture in oil and gas drilling deteriorated. Other sluggish industrial segments included transportation equipment, iron and steel, and nonelectrical machinery. All these segments have one thing in common: Stiff competition from abroad.

The Commerce Department reported that American factories were operating at just 79.4 percent of capacity in March, the lowest level in two years. The operating rate in the nation's factories, mines, and utilities dropped 0.6 percentage points for the month.

The softness in production was also reflected in employment figures. The number of factory workers fell by about 42,000 in March on a seasonally adjusted basis. Coupled with the February drop, about one-third of the gains realized during the preceding four months were wiped out.

There was some hope, however, for future industrial prospects. Falling interest rates, declining inflation, and the lower value of the dollar overseas could help production during the coming months.

Services continued to take up the employment slack, adding 271,000 workers in March. This followed a gain of 216,000 in February. In March, business and health services added 149,000 workers, while retail trade added an additional 77,000. Retail sales other than autos held up well in March, rising 0.6 percent. This followed increases of 0.8 percent in February and 0.4 percent in January. Big gains were registered in building materials, accompanying an upsurge in housing construction. Sales of softgoods overall dropped, although the figures were biased by declines in gas station revenues. Excluding such revenues, sales of softgoods rose 0.6 percent in March, following a rise of 0.8 percent in February. Department store sales continued strong, with gains of 1.9 percent in February and 1.2 percent in March, while clothing store sales rose 1.5 percent in March. For the first quarter, softgoods sales excluding gas station revenues rose at an annualized rate of 5.9 percent.

There was also good news for consumers. The consumer price index fell 0.4 percent in

both February and March as oil prices collapsed. It was the largest two-month drop in more than 35 years. Gasoline prices fell a record 12 percent in March, to their lowest levels since 1979. Fuel-oil prices also fell, by a record 11.5 percent in February.

The producer price index for finished goods also fell sharply over the first quarter. Energy prices accounted for the bulk of the decline, dropping 13.4 percent in March, while food prices rose a modest 0.3 percent. Other items, which make up two-thirds of all finished goods prices, rose 0.6 percent in March. Leading the way in price increases were such things as furniture, furnishings, and floor coverings, reflecting the upsurge in housing construction.

Lower energy prices helped keep inflation at bay, but inflation remained relatively calm in most other areas anyway. Excluding energy, prices rose at only a 3-percent annualized rate during the first quarter, down from the 5.5-percent annualized rate during the fourth quarter of 1985. Thanks in large part to falling energy prices, disposable income rose at an annual rate of 7 percent during the first quarter, ahead of the 4 percent average quarterly rate of 1985. For the second consecutive quarter, disposable income grew faster than consumer spending, giving consumers an opportunity to rebuild savings and pay off debts.

Housing construction continued to be a bright spot. While new construction dropped 2.4 percent in March, construction rates still remained at their highest levels since 1978. The impetus for the construction upsurge was a continuing decline in mortgage interest rates.

The Commerce Department reported that new construction was proceeding at a seasonally adjusted annualized rate of 1.95 million units in March, the third month in a row that building was proceeding at a rate above 1.9 million units. The pace represented a 12.4 percent increase over the fourth quarter of 1985 and put building activity at its highest level since 1978, when building starts exceeded 1.9 million units for 10 consecutive months.

In Wyoming, the oil industry continues to suffer from the effects of plummeting oil prices. According to Hughes Tool Company figures, the rig count in Wyoming stood at just 25 by mid-April--at its lowest level since 1971. Southern Wyoming coal fortunes also received a setback when Carbon County Coal decided to lay off 200 workers at its Hanna mine. One bright note, however, was sounded by tourism boosters. With lower gasoline prices and fears of terrorism abroad, tourism officials are expecting vacation travel to increase in Wyoming this summer.

S.T. Mast, IPR

# #

Spring Minerals Outlook

OVERVIEW

About two years ago, forecasting mineral production for the state was relatively easy and even exciting. Of course, the forecasts were all still optimistic at that time, and the recession had not really struck Wyoming. Many of us knew the trend could not continue forever, and although state forecasts were almost always significantly below forecasts by the federal government, it was hard to convince anyone that the mineral industry could not escape the downturn affecting the rest of our nation.

Let us look at the bad first. Wyoming's uranium industry has weakened markedly. Annual production has fallen from 7.5 million tons in 1980 to around 1 million tons in 1985. In this case, the demise was not just the recession. The Three-Mile Island incident, coupled with scaled back energy growth, have had their effects; at the same time, new and very competitive Canadian and Australian uranium supplies appeared on the scene.

The prognosis remains gloomy, with annual production slated at less than 1 million tons for the rest of the decade. The more pessimistic forecasters even see cessation of all domestic uranium mining. We suspect a total collapse is unlikely as complete cessation of domestic production is something that will likely not happen. Because Wyoming and New Mexico have the largest domestic uranium reserves and are the two largest uranium-producing states, some mines are likely to survive.

However, there is currently only one mill and one mine active in the state. Employment has dropped from over 5,000 in 1979 to less than 760 in 1985.

We see a slim chance that production could increase very slightly by the early 1990s, but only if there is an improvement in public opinion about the safety of nuclear power. Foreign competition from Canada and Australia with their high-quality ores, however, will capture an inordinately large share of any new demand. Prices have fallen over the same time period and are now hovering around $17.00 per pound, compared to $42 per pound in 1979. Prices are not likely to increase substantially.

Even worse than uranium, the state's iron ore industry is now defunct. In 1980, CF&I's Sunrise mine and mill near Gournsey closed. Then in 1983, U.S. Steel shut down its Atlantic City mine and mill, ending a long history of iron-ore production in Wyoming. With the current demise of the nation's steel industry, Wyoming's hopes for a revival of iron mining are dim to nonexistent in the foreseeable future.

Having discussed uranium and iron perhaps the worst is over--although some may disagree. Bentonite production, for example, declined about 41 percent between 1981 and 1983. This decline of approximately 1.2 million tons per year was coupled with the price collapsing to about one-third of what it had been. It is surprising that no bentonite operations have closed as a result of these drastic reductions in demand and price. Decreased oil and gas drilling, decreased demand for pelletized iron ore, and decreased foundry demand account for the downturn. To offset price declines, companies have improved their efficiency while laying off employees.

Forecasts show gradual increases in production and price as the nation recovers from the recession--putting bentonite production at between 1.7 million to 2.0 million tons per year for the remainder of the decade. The only scenario that might significantly alter this prognosis would be major increases in oil and gas drilling -- something we do not anticipate happening. Wyoming, however, will remain the largest bentonite-producing state and will continue to supply 90 percent of the domestic demand.

Trona or sodium carbonate-bicarbonate production from southwestern Wyoming has hovered between 10 million and 12 million tons annually for the last four years. Our forecast indicates little change is in store throughout the 1980s. The greatest hope for trona is an export market, but the trona industry has been unable to make significant progress with this potential market. Claims that U.S. producers were trying to glut the market and eliminate their foreign synthetic soda ash competitors have prompted tough import quotas and thwarted efforts to expand markets overseas. Rail transportation costs are also a significant obstacle.

Wyoming contains the world's largest trona deposits and is the largest producer of soda ash, or refined trona. The glass industry is the primary user of soda ash, although there are hundreds of other uses for the product. Competition from plastic and metal containers

have hurt the industry. The five large underground mines and their mills have experienced numerous layoffs over the last few years. The mills are operating at 50 percent to 79 percent of their capacity, averaging 70 percent. Soda ash prices have fallen from a high of $92 per ton to about $69 per ton in 1985.

Turning to oil, production has increased for the last two years and apparently increased slightly again in 1985. Current production is around 128.5 million barrels. Production will now probably resume its gradual 3 percent to 4 percent decline of the 1970s. Currently, we forecast annual oil production to remain above 120 million barrels through 1988.

At the same time production began increasing, the price began to fall, but the big collapse occurred in January of 1986. In 1985, the average barrel of oil in Wyoming was closer to $25 or $26 than the mid-$30s of a few years ago. Prices are now hovering around $14. There are indications that the price has not yet bottomed out. This declining price has more than offset the value of increased production.

Drilling is way below seasonal norms, and it appears lack of demand and low prices (as well as industry concerns over proposed tax reforms and new regulations) are causing a downturn or hesitation in activity. It is noticeable that most drilling is in the Powder River Basin -- the state's major oil-producing area. Some marginal fields are already shutting in production as the low prices make it uneconomical to produce some of the heavier oils.

Production of natural gas is not very encouraging, although it appears 1985 production exceeded that of 1984. Production in 1985 was disappointing, as it apparently barely exceeded 603 billion cubic feet (about 28 billion cubic feet below our forecast). Our forecast is for continued increases in production, perhaps exceeding 800 billion cubic feet by 1990. Of course, these gains, as substantial as they seem, are held down by the gas bubble. There is capacity for far greater production if a market were only there.

Prices of natural gas have also fallen slightly for three years in a row. Although we anticipate further erosion of the price, which is now about $2.89 per thousand cubic feet, we expect the price to begin increasing in the last half of the decade, but no big increases are forecast. Drilling for new natural gas fields has ground to a near halt.

The huge carbon dioxide (CO_2) reserves (40 trillion cubic feet) in southwestern Wyoming are another bright spot. Exxon's planned production from Riley Ridge will be substantial, and the real bonus will be the oil recovered by the CO_2-enhanced recovery projects supplied by this production -- that is if the weak oil prices do not lead to the abandonment of all the projects.

I saved coal for last. Although the prognosis is good, the current marketing actions are making accurate forecasts quite difficult. For example, as recently as December 1985, we projected 1985 coal production at 145 million tons -- an 11 percent increase over 1984. The actual gain turn out to be closer to 7 percent and pushed production to 140.4 million tons. Total 1984 production was 130.7 million tons. In 1985, Wyoming did become the second largest coal-producing state in the U.S., behind only Kentucky. We had been a steady third for some years, with West Virginia holding second place.

Wyoming now accounts for almost 15 percent of the nation's coal production and about one-fourth of the nation's production from surface mines. Contributing to the U.S. and Wyoming production increases was the 6 percent to 7 percent increase in coal consumption reported by electric utilities for 1984 and probably 1985. The mines in the Powder River Basin accounted for most of the increase: The 119.8 million tons produced from this basin in 1985 was up 6 percent over 1984. Coal production from Campbell County alone now accounts for nearly 82 percent of Wyoming's production. The Powder River Basin now accounts for about 86 percent of the state's production.

A total of 30 coal mines reported coal production in 1985. Six of the state's coal mines produced over 10 million tons each. With 1985 production of 23.2 million tons of coal, Black Thunder remains the largest coal mine in the nation. Kerr-McGee's Jacobs Ranch Mine (13.0 million tons) is now second in production, followed by Amax's Belle Ayr Mine (12.8 million tons) and Carter Mining's Rawhide Mine (12.2 million tons).

Despite the surge in coal production, employment at Wyoming coal mines only increased slightly in 1985, after declining slightly in 1984. Current employment is 5,374. This employment rate, combined with the production increases, means that productivity (tons per miner) remains very high and reflects a shift to the larger, less-labor-intensive surface mines in the Powder River Basin (as well as an increase in overall mining efficiency).

Coal production increases in 1984 and 1985 were dampened by the erosion of price. Coal prices apparently fell again in 1985 and mark the third consecutive year where prices fell. Unfortunately, it does not look like the price has bottomed out yet, and although we forecast higher prices by the end of the decade, those prices won't be much more than making up for the recent declines. In other words, the 1990 price could be the same as the 1981 or 1982 price of coal. The average price for a ton of Wyoming coal dropped from $10.67 in 1983 to $9.64 in 1984. Powder River Basin coal is now about $7.18 per ton, compared to $22.63 from

other areas of the state. Most of the additional price drop in 1985 is attributed to substantial declines in the prices paid for Powder River Basin coals on new and spot contracts (some prices are below $5.00 per ton).

Coal mine capacity is currently estimated at 243.4 million tons per year, putting production at 57 percent of capacity. Proposed new mines could add another 80.4 million tons of capacity by 1990. We estimate the state's coal mines will still be between 43 percent and 57 percent of capacity by 1990.

Production from the Powder River Basin, which was near or even above contracted production in 1985, is expected to increase by up to 10 millions tons in 1986; statewide production was only 3 percent less than contracted production in 1985 and is expected to come close to 1 percent in 1986 (implying less-than-contracted production or lost contracts in southern Wyoming). From 1986 to 1990, we expect to see the production curve flatten out, with annual rates of increase leveling off or increasing only 1 percent to 3 percent. Similarly, the amount of production below contract amounts will become less and less. By 1990, it is expected that both actual production and contract production will only reach 152 million tons.

The bottom line is that if bad times do not last too long, nearly all the state's mineral industries are postured to rebound quickly. If demand stays down too long, some excess capacity may disappear under Chapter 11 or out of frustration and marginal profits that simply shut down exploration, wells, mines, and mills.

Gary B. Glass, State Geologist
Geological Survey of Wyoming

OIL AND GAS UPDATE

The most important development for Wyoming in the past few months is, unfortunately, the continued slide in crude oil prices. Over this period, world spot prices have fallen dramatically and are currently in the $12 to $14 a barrel range. The posted price (the price refiners pay domestic producers for crude oil) is somewhat higher. The large drop in price is attributed to the current oversupply of crude oil on the world market. There is also a good chance that the spot price of natural gas may drop further if fuel oil prices drop further if fuel oil prices drop substantially. This erosion of oil prices, the continuing gas glut, and pending federal legislation detrimental to the petroleum industry have all contributed to a slowdown in drilling activity as the rig count dropped to as few as 37 for the last two weeks in March. Compare this to the average rig count of 93 for all of 1985.

Well completion statistics are in for 1985 and are summarized and compared with figures for 1984, 1983, and 1982 in the table below:

	New Field Wildcats				All Wells			
	Oil	Gas	Dry	Total	Oil	Gas	Dry	Total
1985	64	8	469	541	820	109	809	1,738
1984	57	9	440	506	801	142	750	1,693
1983	23	13	305	341	698	152	550	1,400
1982	68	28	404	500	1,029	272	827	2,128

From: Petroleum Information Corporation, Rocky Mountain Region Report, January 8, 1986, p. 8.

These figures illustrate the continued decreased interest in gas exploration. Although there was a small increase in total completions from 1984 to 1985, the percentage of successful completions dropped to 53.5 percent in 1985, down from 55.7 percent in 1984. During the first six weeks of 1986, the number of completed exploratory wells has decreased more than 50 percent, and there has been nearly a 40 percent decrease in all wells drilled for oil and gas, compared to the same period in 1985. This disturbing trend can be linked directly to the lingering gas surplus and to declining oil prices.

In 1985, the Powder River Basin was the most active area in terms of wildcat and development drilling. The main target in the northern part of the basin was the Minnelusa Formation, while drilling in the southern part of the basin was aimed at younger Cretaceous formations.

Besides losing revenue from lower oil prices, it was feared Wyoming would also lose $8 million in fiscal year 1986 and as much as $43 million in fiscal year 1987 under the budget-cutting Gramm-Rudman Act. The loss would have been caused by a reduction in royalty funds paid to Wyoming for production from federal lands in the state. However, a subsequent ruling by the federal office of management and budget restored the funds.

The geophysical industry is also feeling the effect of surplus oil and gas. According to the Society of Exploration Geophysicists, the number of seismic crews working in the U.S. and its waters declined for the sixth straight month in January. There was a drop of 16 crews from the December 1985 figure of 326. The January 1986 count is 129 less than January 1985, and 167 less than the January 1984 total.

In an item related to the recent drop in oil prices, several oil companies have announced severe budget cuts. As an example, Atlantic Richfield Company (Arco) slashed its capital spending budget by nearly one-third. The hardest hit area was in exploration and production spending, where cuts were made from $2.95 billion in 1985 to $1.35 billion this year.

On an upbeat note, based on the most recent Wyoming Oil and Gas Conservation Commission figures, it seems likely that oil production for 1985 will be around 128.5 million barrels of oil, compared to 127.8 million barrels in 1984. Gas production for 1985 should approximate 603 billion cubic feet, compared to 600.1 billion cubic feet in 1984.

Since the last issue of Geo-Notes, the U.S. Bureau of Land Management has held two lease sales. The December 13 sale drew high bids totaling $1,467,265 for 46,908 acres. There were bids on 141 parcels out of the 211 parcels offered. The average bid per acre was $31.28. Exxon Corporation's high bid of $1,167.23 per acre was for an 80-acre lease in the Powder River Basin only one mile from Frontier oil production in Crawford Draw Field.

The February 5 sale drew high bids of $1,992,326 for 38,806 acres. There were bids on 154 parcels out of 208 parcels offered. Exxon Corporation made the high bid of $680 per acre for a 160.05-acre lease in Amos Draw Field. Exxon also made the sale's second, third, and fourth highest bids for three other Amos Draw tracts. The average bid for the sale was $51.34 per acre.

The Wyoming Board of Land Commissioners' lease sale held January 21 drew $630,069 in high bids. Of the 200 tracts offered, 123 tracts covering 49,783 acres received bids. The average bid was $12.66 per acre. Duane Haley of Englewood, Colorado, made the high bid of $330 per acre for a 320-acre lease in the Powder River Basin. This tract is near Bishop Ranch, East Field which produces oil from the Minnelusa Formation.

Once again, Exxon's LaBarge Project is in the news. It was recently announced that the work force at the gas processing plant would probably shrink by about 2,000 workers in April as work on the first phase nears completion. Work on the second phase has been postponed due to the uncertainty over the status of enhanced oil recovery (EOR) projects using carbon dioxide. The economic feasibility of such projects is being adversely affected by lower crude oil prices. The Wyoming Industrial Siting Council has granted Exxon a rehearing on two disputed requirements in its siting permit for the second phase of its project.

Amoco Production Company has been granted a siting permit for its proposed carbon dioxide separation plant at Bairoil. Total cost of the project is now estimated at $142.5 million, down from an earlier estimate of $164.8 million. A portion of the project has already been delayed. Construction on the plant will begin this summer, but the entire system will not be developed as soon as originally planned, reportedly because of the limited availability of carbon dioxide. Amoco plans to begin injecting carbon dioxide into the Tensleep Sandstone of Wertz Field by late 1986. The peak work force is estimated at 647 in the third quarter of 1986, with levels to remain around 600 workers until the middle of 1987.

Amoco has also announced plans to construct a $134-million gas plant northeast of Evanston. The plant will process sour natural gas from Ryckman Creek, Painter Reservoir, East Painter Reservoir, and Clear Creek fields and will have a design capacity of 240 million cubic feet of gas daily. Other partners in the project include Chevron and Champlin Petroleum.

Gas from five Wyoming overthrust belt fields would be transported to Bakersfield, California, if the Federal Energy Regulatory Commission (FERC) approves plans for a pipeline between Kemmerer and Bakersfield. Approximately 356 million cubic feet of gas per day, with a daily value of about $1 million, would be provided by the Wyoming producers. The gas would be used to produce steam heat for recovery of heavy oil in several California fields. If approved, construction of the pipeline would begin in 1987 and would be completed in 1988.

Snyder Oil Company plans to drill a 3,600-foot corehole this summer in the South Fork Valley of the Shoshone National Forest. The location is about 33 miles southwest of Cody. The test will be used for gathering geologic information and will not be completed for oil or gas production. If test results indicate potential for oil or gas production, the well will be shut-in and an environmental impact statement will be completed before production can begin. So far, Snyder has not filed an application with the U.S. Bureau of Land Management for a permit to drill.

Anschutz Corporation has applied for a permit to drill a 5,000-foot well in the Mosquito Creek drainage in the Palisades Wilderness Study Area. The well location is about six miles southwest of Wilson. The Wyoming Wilderness Act allows oil exploration in the Palisades area, and full field development could be permitted if done in an environmentally acceptable manner.

Three new rules were proposed at the February hearing of the Wyoming Oil and Gas Conservation Commission: (1) Production curtailment schedules are proposed for exception wells; (2) the deletion of rectangular spacing patterns is proposed by dropping 80-acre and 320-acre spacings; and (3) surveyors are being instructed to show the type and location of corners used to determine well locations. The public hearings on these proposed rules were held at the April 8 commission hearings.

The U.S. Geological Survey held its second annual V.E. McKelvey Forum on Mineral and Energy Resources on February 5 and 6 in Denver. Several talks and poster sessions presented by U.S. Geological Survey geologists dealt with subjects related to oil and gas in Wyoming. Topics included: (1) "Three statistical methods for estimating undiscovered resources

based on the Minnelusa play, Powder River Basin;" (2) "An integrated approach using computers in the geologic assessment of hydrocarbon resources in the Powder River Basin, Wyoming and Montana;" (3) "Sequential tectonics of the western margin of the Powder River Basin, Johnson and Sheridan Counties, Wyoming;" and (4) "Structure and petroleum potential of the Palisades Roadless Area, Idaho-Wyoming thrust belt salient near Jackson, Wyoming." Extended abstracts of all the presentations are available in U.S. Geological Survey Circular 974. This circular is free on application to the Distribution Branch, Text Products Section, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

Rod DeBruin, Petroleum Geologist
Geological Survey of Wyoming

URANIUM AND INDUSTRIAL MINERALS UPDATE

Uranium

Only one uranium mine remains active in Wyoming, the COGEMA-Pathfinder Shirley Basin Mine in Carbon County. COGEMA's Gas Hills mine and mill (the Lucky Mc) remains closed for remodeling. COGEMA is negotiating for purchase of uranium properties in the Gas Hills from the Tennessee Valley Authority in order to provide additional reserves for their expanded operation, scheduled to resume production in mid-1986. COGEMA-Pathfinder's production is exported to France to fuel nuclear power plants. Bear Creek Uranium's Bear Creek Mine in the Powder River Basin closed in December.

The American nuclear power industry has reduced stockpiles of uranium oxide that it had built up under contracts signed in the late 1970s enough so that new contracts have been let. The American Electric Power Service Corporation signed a contract with Energy Resources of Australia, Ltd. for yellowcake (uranium oxide) from Australia. The Pennsylvania Power and Light Company signed a supply contract with the same Australian company, as did a third, unnamed utility. As a result, Energy Resources of Australia, Ltd. announced plans to double its output from the Ranger Mine, the world's largest, located in Northern Territory, Australia. Obviously, none of these contracts are helpful to Wyoming's uranium industry. The spot market price of uranium oxide is $17.00 per pound, up $2.00 from February 1985.

Domestic uranium producers have been calling for import restrictions on foreign uranium. The production costs for domestic uranium are about 50 percent greater than the pre-transportation production costs for Canadian and Australian uranium deposits. This is due primarily to the higher grade and the size of the foreign deposits. The average grade for U.S. deposits was about 0.1 percent, U_3O_8, compared to about 3.0 percent in Canada and Australia, with as much as 8.0 percent U_3O_8 reported from one Canadian deposit. Government subsidies of foreign producers have also been cited as a cause of lower foreign production costs. According to the February 17, 1986, issue of the Northern Miner, David Haglund of Queen's University says that the dominance of U.S. import markets by Canada has little to do with politics or government policies but almost everything to do with geology (grade and size of the ore deposits). The U.S. trade representative recommended to Energy Secretary John Herrington that restricting uranium imports is not warranted and that foreign subsidies are not a significant factor determining the price advantage of foreign uranium. The Uranium Producers of America disagree with the conclusions of the U.S. trade representative and continue to press for import restrictions, saying that such restrictions are required under existing Department of Energy regulations.

Foreign uranium purchasers have expressed an interest in uranium production from the United States. Taiwan Power Company (Taipower) has approved a $25-million uranium exploration contract with Rocky Mountain Energy Company to explore for uranium in four states, including Wyoming. Taipower is contributing 20 percent towards a five-year exploration effort.

Reclamation proposals (as well as reclamation requirements) have generated the most news regarding uranium in Wyoming in the first quarter of 1986. The Wyoming Department of Environmental Quality (DEQ) has proposed full state funding to clean up abandoned tailings now located at the Susquehanna Mill tailings site near Riverton. The U.S. Department of Energy (DOE) wants to stabilize the tailings at Riverton at a cost of $15 million, while the DEQ wants to transport the tailings to abandoned mine sites in the Gas Hills, 45 miles east of Riverton, at a cost estimated to be between $18 million and $35 million. DOE has now informed the state that it must foot the additional costs of moving the tailings if that is the method chosen.

COGEMA-Pathfinder has been asking DEQ to relax mine reclamation rules, particularly as applied to reclamation of abandoned mines acquired by purchase. COGEMA is planning to purchase property from the Tennessee Valley Authority in the Gas Hills. This property contains some unreclaimed mines. Governor Herschler asked DEQ to modify its rules on reclamation of mines acquired by purchase. These rules currently require immediate reclamation unless delayed by permit revision, which is a long process requiring public notices. New rules proposed by the DEQ in February 1986 would allow companies to delay reclamation on up to 20 percent of their land for as long as five years, subject to notifying DEQ. Pathfinder, however, has indicated it is

not pleased with the new regulation, calling it "counter-productive, arbitrary and inconsistent" with state law.

The Leuenberger Ranch deposit in Converse County was reportedly purchased by the London Central Power Exchange, Ltd. The Leuenberger Ranch property was formerly owned by Teton Exploration and was developed as an in situ mine. Although production tests were run on the ore body in 1981, the deposit never made full production before being shut down in 1982.

Trona

Trona production in Wyoming has increased about 5 percent over the first quarter of 1985. However, domestic consumption of soda ash (refined trona) for all of 1985 was almost identical to that of 1984. Wyoming trona production is expected to increase slightly this year due to the phase-out of the synthetic soda ash plant owned by Allied Chemical Company in Syracuse, New York.

In related trona news, FMC Corporation announced an expansion of its processing plant in Green River to produce more sodium tripolyphosphate, used in detergents. This expansion will not significantly increase total trona production, but it will expand detergent-related sales, slightly offsetting the decline in glass-related consumption of soda ash.

FMC Corporation also reported successful testing of the new trona in situ mining process. This method, which recovers chemically-dissolved trona through pumping wells, reportedly recovers nearly 100 percent of the trona, compared with 45 percent recovery from underground mining methods. It is also less labor-intensive. This process also costs as much as 25 percent less than conventional mining. If this method lives up to its promises, FMC would be able to produce trona at less cost than the other producers and gain an advantage over its competitors. Since demand is still much less than capacity, the development of this method will not increase the total production of trona in Wyoming.

FMC was also in the news in the first quarter of 1986, as it became the target of hostile takeover attempts by both General Dynamics and United Technologies. Two other trona producers were taken over in recent years -- Allied by the Signal Corporation, an electronics company, and Texasgulf by a French Government corporation. Stauffer was acquired by Cheseborough - Ponds last year. No changes are expected in the trona region if the takeover of FMC is successful.

Limestone

During this last quarter, the Monolith Portland Cement plant in Laramie and its associated contractor, Wyoming Construction, Inc., were purchased by Centex Cement Enterprises, Inc., headquartered in Texas. Centex also announced the acquisition of additional limestone reserves in the Laramie area and plans to expand and modernize the plant. During the modernization phase, Centex will continue to supply cement to existing customers through purchases from other producers in the region. Monolith was Wyoming's only producer of cement. The production of cement in Wyoming seems likely to resume once the plant modernization is completed.

Other Industrial Minerals

Bentonite production remained stable during the first quarter of 1986. Companies have been facing low prices for three years as demand lags. The recent decrease in oil prices will probably result in further decreases in demand and prices for bentonite as oil and gas well drilling slows.

Chevron Chemical Company continued construction of its Rock Springs fertilizer plant, scheduled to begin production this July. Chevron also announced that it was closing a liquid fertilizer plant in Salt Lake City and transferring the production of this plant to the Rock Springs facility. This will not increase the total projected output of the plant (200,000 short tons per year), but it will change the output product mix to include liquid as well as granular phosphate fertilizers. The plant will use phosphate mined north of Vernal, Utah. The phosphate will be slurried to the Rock Springs site. Sulfur for the plant will come from Chevron's natural gas desulfurization plant in Uinta County, Wyoming.

Naturally-occurring sulfur deposits near Thermopolis were recently acquired by Continental Sulfur Company, and proposed mining plans were announced in December. If opened, this will be Wyoming's first mineral sulfur mine since the 1920s when these Thermopolis deposits were last worked.

The Burlington Northern Railroad, which tested rock from the Sunrise area for ballast last November, has apparently found the material suitable and is planning to conduct a drilling program to determine the reserves in the area. The Chicago & Northwestern Railroad continued to explore for a ballast source in Wyoming.

The production of construction aggregate in southeastern Wyoming is expected to increase as the initial construction of 50 missile silos begins this year. Material will be needed for the silos and the upgrading of access roads.

The production of gypsum and brick clay should increase in 1986 as regional construction increases. The use of crushed rock, and sand and gravel, for highway construction may decrease this year. Federal

highway construction funds are expected to decrease, which will result in less highway construction.

Ray E. Harris, Uranium and Industrial Minerals Geologist, Geological Survey of Wyoming

COAL UPDATE

Year-end production figures released by the Wyoming State Mine Inspector indicate that Wyoming coal mines produced 140.4 million tons of coal in 1985. With Kentucky producing 161.8 million tons and West Virginia producing only 129 million tons, Wyoming was firmly in second place in U.S. coal production at the end of 1985. Although the 140.4 million tons produced last year is some 5 million tons less than our last prediction in September 1985, it still represents a gain of 10 million tons, or a 7 percent increase over 1984's record 130.9 million tons. An overall decrease in unreported monthly tonnage accounted for our overestimate.

Coal production from Powder River Basin mines was up over 7 million tons from 1984; nearly all this increase was in Campbell County. Oddly enough, Powder River Basin mines produced a smaller percentage of the state's coal in 1985 (85.4 percent) than in 1984 (86.2 percent). This is due to a 47 percent production increase (about 4.2 million tons) in Sweetwater County from 1984 to 1985, which resulted in Sweetwater County's increased share of the state's total production. This increase in the Green River Basin more than offset a 35 percent decrease in both Lincoln County and Hot Springs County. Production from Carbon County is at its lowest level since 1971.

Thirty coal mines reported coal production in 1985, an increase of two mines over 1984. Campbell County gained one mine with the opening of the Rochelle Mine (Peabody) in the extreme northern part of the county, and Sweetwater County gained one mine, the Swanson Mine west of Rock Springs. The Swanson Mine is a small underground mine that produced bituminous coal for local uses. In addition, one coal augering operation reported tonnage.

In Carbon County, only four mines reported production in 1985, one less than in 1984. Arch Mineral Corporation's Seminoe No. 1 Mine is no longer a producing mine and is in the final stages of reclamation. The Medicine Bow Mine ended production in the summer of 1985 and is considered inactive (except for reclamation work) at this time. Carbon County Coal Company continued to operate the state's only major underground coal mine in 1985.

In the Powder River Basin, six mines produced over 10 million tons each, with Thunder Basin Coal Company's Black Thunder Mine remaining the leading coal producer in the state (and in the nation) with 23.2 million tons produced in 1985. Carter Mining Company's Rawhide Mine recorded a 2.8-million-ton increase in production. Three of the basin's largest mines reported decreased production in 1985; Amax Coal Company's Belle Ayr and Eagle Butte mines were down 0.6 and 1.6 million tons, respectively, and Kerr McGee's Jacobs Ranch Mine was down 1.4 million tons. Of the basin's 19 mines, only six reported decreased production in 1985.

Coal mines in Sweetwater County made significant gains in production in 1985. Bridger Coal Company's Jim Bridger Mine produced 7.2 million tons of coal in 1985, an increase of nearly 3 million tons from 1984. Black Butte Coal Company's mine produced 5.5 million tons in 1985, an increase of 1.3 million tons, and Prospect Point Coal Company's Leucite Hills Mine registered an increase of 0.1 million tons. Coal mines in Lincoln County (eastern Wyoming) and Hot Springs County (Bighorn Basin) reported about the same production in 1985 as in 1984.

There were 38 more employees working in Wyoming coal mines at the end of 1985 than at the same time in 1984. This is the first year since 1980 that employment in Wyoming coal mines has not decreased. In the Powder River Basin, Campbell County mines reported 85 more employees, Converse County mines reported 51 more employees, and Sheridan County mines reported 19 fewer employees. Overall, the Powder River Basin had 117 more employees in 1985 than in 1984. Mines in Sweetwater County reported 29 additional employees in 1985, mines in Lincoln County reported only two less employees in 1985, the Hot Springs County mine reported one less employee, and Carbon County mines reported 105 fewer employees. In 1980, there were almost 1,000 more employees at Carbon County mines than in 1985.

Employment at Wyoming coal mines in 1986, however, may be less than in 1985. Three coal companies announced layoffs in late 1985 and early 1986. Arch Mineral Corporation laid off 23 employees at their Seminoe No. 2 Mine in Carbon County on December 1 and furloughed an additional 62 employees on December 18, 1985. In March, however, they recalled 34 laid off miners at the Seminoe No. 2 Mine. Big Horn Coal Company announced the layoff of 18 miners in January at its Sheridan County mine. In a related announcement, Decker Coal Company, operator of two Montana mines just north of the Wyoming line near Sheridan, announced that 50 miners would be laid off in May 1986. Most of the employees at the Decker mines reside in the Sheridan, Wyoming, area. Decker cited "curtailment of coal sales" as the primary reason for their layoffs; Big Horn's layoffs were needed to make their operations "more efficient".

In January, Thunder Basin Coal Company laid off 150 employees at the Black Thunder and Coal Creek coal mines in Campbell County.

Thunder Basin Coal Company, owned by Anaconda Minerals Company, a subsidiary of Atlantic Richfield Company, cited a substantial decrease in the amount of overburden to be removed at the Black Thunder Mine and the failure to secure additional coal contracts at Coal Creek as reasons for the layoffs. Although these are the largest layoffs to occur in the Powder River Basin, Thunder Basin Coal Company laid off 45 workers (both salaried and hourly) in a reorganization of management in October 1983. In January 1986, layoffs reduced Thunder Basin's work force of about 670 at the two mines by about 22 percent.

Although there have been other layoffs in the Powder River Basin mines in the last few years, the Thunder Basin layoffs were on a much larger scale than previous layoffs and came very suddenly. The layoffs at Black Thunder and other mines have increased mine productivity. Since 1980, with each year's coal production increasing, employment has either declined or only increased slightly. For example, in 1980, each employee in a Wyoming coal mine accounted for the production of about 15,000 tons of coal. In 1985, each employee accounted for about 26,000 tons of coal. Although part of this change is explained by the shift in production from southern Wyoming to the Powder River Basin, the demands of current coal markets have forced mines to become more efficient.

In coal contract news, Northern Indiana Public Service Company (NIPSCO) purchased 100,000 tons of coal from Carbon County Coal Company (CCCC) in January on the spot market and an additional 100,000 tons of coal in February, also on the spot market. These purchases follow the settlement reached between NIPSCO and CCCC in late 1985 that resulted in cancellation of a long-term contract and an award to CCCC of $181 million in damages. These spot sales were $10 to $15 per ton (delivered) less than the coal prices paid under the rescinded contract. The first shipments to NIPSCO were taken from CCCC's coal stockpile left when mining operations were suspended in October. The additional 100,000-ton spot sale required the underground mine to return to production. Although mining was suspended for a time, none of CCCC's 280 employees were laid off. Work on roof support, maintenance, and reclamation continued in the mine during the suspension. In late March, however, NIPSCO announced that it would not buy any more coal from CCCC, and in April, the firm announced an end of operations and a layoff of employees.

Rochelle Coal Company (a subsidiary of Peabody Holding) opened Campbell County's fifteenth coal mine (Rochelle Mine) in the fall of 1985 when it began shipments to Northern States Power Company's generating plants in Minnesota. Rochelle's contract is the first Wyoming coal sold to utilities in Minnesota. The Rochelle Mine also expects to supply Kansas City Power and Light's Hawthorn and Montrose generating plants in Missouri under a 10-year, 11-million-ton contract that was signed in 1985. When these two plants complete the conversions necessary to burn low-sulfur, subbituminous coal, deliveries from Rochelle could start this spring and next winter. The utility hopes to save its customers $45 million in the next two years by using Wyoming coal, as well as save another $300 million by eliminating the need for scrubbers on the two plants.

Several other short-term coal contracts have recently been signed with Wyoming producers. Wisconsin Power and Light will purchase 11 million tons of coal in 1986 from the Black Thunder Mine for the Columbia Unit 2 Plant at Portage, Wisconsin. Chicago & North Western Transportation Company (C&NW) will haul the coal under a five-year transportation contract with the utility. The Platte River Power Authority (PRPA) is currently negotiating a spot coal contract with Nerco Coal's Antelope Mine for 35,000 tons of coal per month during 1986 for the utility's Rawhide Plant near Fort Collins, Colorado. This will supplement an existing contract the utility already has with Nerco. Burlington Northern and PRPA have also renegotiated a new seven-year contract for transportation of the coal. Finally, the Lower Colorado River Authority and the City of Austin, Texas, have awarded spot contracts to Carter Mining Company and Thunder Basin Coal Company for the first half of 1986. Carter's Caballo Mine will probably furnish 135,000 tons per month, while 70,000 tons per month will be furnished by Thunder Basin.

On December 10, 1985, the Interstate Commerce Commission approved C&NW's request to extend its rail line 10 miles farther north into the Powder River Basin. In January, Burlington Northern Railroad Company (BN) appealed the decision. Then in March, BN and C&NW reached an agreement in which BN will share its existing line with C&NW, negating the need for a new line. The shared line will provide three more Powder River Basin mines (Caballo Rojo, Belle Ayr and Caballo) with a choice of using either BN or C&NW for coal transportation.

In other coal transportation news, two new contracts for hauling Powder River Basin coal were recently signed. In January, C&NW and Wisconsin Electric Power Company signed a seven-year contract for hauling 1.5 million tons of coal per year from the Powder River Basin to the utility's Pleasant Prairie generating plant in Wisconsin. Although no specific coal mines were mentioned as coal suppliers, it did not include coal supplied from Carter Mining Company's Rawhide Mine, which is shipped by BN. The utility currently buys additional spot coal from several other Powder River Basin mines. The Omaha Public

Power District recently signed a new 13-year coal transportation contract with BN after intense bidding competition with the rival C&NW/Union Pacific joint venture railroad. The contract calls for transportation of up to 2 million tons of coal per year from an unnamed Powder River Basin mine (or mines) to the utility's North Omaha and Nebraska City generating plants. The utility has been purchasing coal from Carter Mining Company's Rawhide and Caballo mines on long-term contracts and spot coal from Triton Coal Company's Buckskin Mine.

In federal coal-leasing developments, it now appears that the moratorium and suspension of the federal coal-leasing program may have ended. The moratorium, which the U.S. Congress imposed in 1983, followed allegations of mismanagement and improprieties in the program. The program was investigated by a congressional commission and the Office of Technology Assessment, and following recommendations of the commission, modifications in the program were made by the Department of the Interior. Because new environmental assessments will be required, the program will probably not resume until late 1987.

The new coal-leasing program is expected to emphasize leasing in response to demand for coal, as opposed to leasing in response to "expressions of interest;" accurate appraisal of the federal coal's value; new procedures at lease sales to encourage competition, to ensure adequate bids, and to obtain a fair market value for the coal; more public participation in the entire leasing process; and continuation of the "regional coal team" concept for determining the location of potential lease tracts, the regional coal supply and demand, amounts of coal to be leased, and timetables for lease sales.

Richard W. Jones, Coal Geologist
Geological Survey of Wyoming

METALS AND PRECIOUS MINERALS UPDATE

During the 1985 field season, the Geological Survey of Wyoming mapped several mines in the South Pass region along the southern tip of the Wind River Mountains. The great majority of these mines were developed in shear zones in metagreywacke. The Tornado Mine is hosted by metabasalts and greenstones, and the Snowbird is a sulfide deposit hosted by amphibolite and meta-andesite. One sample collected from the Snowbird Mine by the U.S. Geological Survey in 1974 assayed 0.13 ounce of gold per ton. The mineralized zone in the Snowbird is as much as 50 feet wide, contains abundant carbonate and quartz, and massive pyrite with minor chalcopyrite.

Mines from the Lewiston district commonly produce anomalous gold assays. For example, a grab sample of quartz from the Good Hope Mine dump assayed 1.18 ounces of gold per ton. Specimens containing visible gold were also recovered from this property. Of additional interest are banded iron formation samples collected from the northeastern edge of the district that contained detectable gold.

The Lewiston district may be Wyoming's least known gold district. Historic records on the district are few. The principal gold deposit at Lewiston occurs in silicified shear zones hosted by Archean metagreywacke of the Miners Delight Formation. Mineralized shears are conformable to regional foliation, whereas crosscutting shears are unmineralized.

In addition, channel samples taken in the Diana Mine of the South Pass-Atlantic City district showed the Diana vein to average 0.13 ounce of gold per ton.

Recently, Cominco American, Inc. donated to the State of Wyoming approximately two-thirds of the diamonds that it recovered from Wyoming state lands during its exploration project in 1980 and 1981. At least 126 diamonds totaling 15.38 carats were recovered from state land. Diamonds were also recovered from adjoining Union Pacific lands, but no production records are available. Of the diamonds recovered from state property, 47 percent are gem quality. Weight of the recovered diamonds range from less than 0.1 carat to 0.86 carat.

W. Dan Hausel, Deputy Director
Geological Survey of Wyoming

# #

Spring Agricultural Outlook

There is little on the economic horizon to become optimistic about for agricultural producers in 1986. The points of optimism found in lower energy costs and the low rate of inflation are offset by slow world economic growth and burdensome supplies of agricultural products.

Chief among the optimistic impacts has been the sharp decline in energy prices in recent months. Lower oil prices should be reflected in everything from fertilizer inputs to reduced transportation and marketing costs. A second, and related factor, is the continuing low rate of inflation in the industrialized world. Low inflation, and the expectation that it will continue, will likely help to maintain the decline in U.S. and world interest rates. Interest paid to lending institutions for production and variable-interest-rate real estate loans should be heading lower.

The decline in oil prices will be a double-edged sword in many section of the country, however. In states like Wyoming that are heavily dependent upon energy production, the employment picture is grim. Many of the state's farmers and ranchers who have used off-farm employment to supplement low agricultural income are finding that work in energy and related areas is no longer available. Producers in selected areas of the state who were able to reap the benefits from coal, gas, and oil leases are now finding the offers dramatically reduced from five years ago. These factors will compound agricultural income problems in the foreseeable future.

LIVESTOCK

All cattle and calves in the U.S. on January 1, 1986 totaled 105.5 million head, down 4 percent from 1985 and 7 percent below 1984. This represents the fourth consecutive decline in January 1 cattle numbers and resulted in the lowest number of cattle in the U.S. since 1963.

The 1985 calf crop was estimated at 41.0 million head, down 3 percent from 1984 and the lowest since 1961. 1985 marked the fifth consecutive year of lower calf crops. The number of calves born in the beef cow sector will continue to trend lower, at least over the next two years.

The inventory reflects that beef producers are still reluctant to take the necessary moves to expand cattle numbers. Beef replacement heifers, at 5.15 million head, were down 7 percent from 1985 and 17 percent below 1984.

For those livestock-dependent producers who are in a financial position to do so, 1986 should be a time to seriously consider holding heifers and rebuilding cow herds. Heifers held for replacement in 1986 would be bred in 1987 and calve in 1988 when livestock prices should have increased to more profitable levels. I do not foresee a dramatic rebound in cattle prices such as occurred from 1976 to 1979, but we should see a persistent improvement in livestock prices beginning in 1987.

The outlook for the remainder of 1986 for Wyoming's cow-calf and yearling operations should be somewhat brighter than last year. Grass-type cattle were priced lower this spring compared to the same time period in 1985. Lower numbers of cattle on feed and vivid memories of what overweight cattle did to the market should keep beef supplies lower and prices higher than a year ago.

There is still some uncertainty connected with the dairy herd buyout program and what effects this will have on cattle prices. If the dairy cattle scheduled for slaughter are allowed to enter the market in an orderly fashion, and the government follows through with its promise to purchase an additional 400 million pounds of beef in 1986, the program will have negligible effects on the typical Wyoming producer.

Prices for calves and yearlings should be 8 percent to 12 percent higher in October-November 1986, compared with a year earlier. Barring a major drought, burdensome feed grain supplies will keep prices near loan levels, and coupled with lower interest rates, result in favorable cost of gain for feedlot operators. Lower inflation rates should keep consumer demand for red meats constant or possibly increasing.

GRAINS

Despite a costly government set aside program for grain producers for crop year 1986-1987, barring a major catastrophe, burdensome supplies will keep wheat and feed grain prices near loan levels for the coming year.

Nationally, winter wheat growers reduced plantings 7 percent from 1985. Spring wheat growers have indicated they intend to decrease seedings to 17.1 million acres from 1985's 17.8 million.

Although fewer acres will likely be harvested this summer, producers will plant their more productive areas. As a result, wheat production in 1986 may be close to 1985's 2.4 billion bushels. Added to an estimated 1.9 billion bushel carryover, the early outlook for 1986-1987 focuses on a possible record 4.3 billion-bushel supply.

Planted acreage and production of feed grains may decline in 1986. The base acreage for corn, which accounted for 82 percent of feed grain production in 1984 and 1985, will probably remain at 84 million, although some acres will be placed in the long-term conservation reserve in 1986.

The best alternative for most grain producers will be to participate in the government program as set forth in the Food Security Improvement Act of 1985. This will boost net prices for producers and should reduce total supplies in the coming year.

Robert D. Carver,
University of Wyoming

# #

Job Openings Outlook

Surveyors

Surveyors measure the earth's surface to determine the contour, location, and dimension of land features. This information is used for making maps and charts of building layouts, highway or road alignments, and grades and sewer line layout and grades; establishing construction sites; and determining land boundaries. A licensed land surveyor is always in charge of the overall survey project and is responsible for the accuracy of the information collected. They plan the job, choose reference points, and prepare maps and reports.

In Wyoming, employment outlook for surveyors largely depends on the construction and energy industries. The current downturn in these industries has in turn created a slight surplus to a surplus of surveyors in Wyoming. Chances for employment are best during summer months when the weather is favorable for construction. Employers also emphasize the importance of experience and licensing. For information regarding licensing contact Sandy Rounds, State Board of Examining Engineers, Herschler Building, Room 4135, Cheyenne, WY 82002, (307) 777-6155.

Most surveyors work 40 hours a week, but overtime and night work are sometimes required. Some projects require travelling long distances and living under camp conditions. Other types of surveying work, such as planning surveys and drawing maps, is done in offices. Surveyors sometimes work in bad weather and under other hazardous environmental conditions.

Wages for surveyors depend on education, experience, and employer. Licensed land surveyors charge $20-40/hour and net $10-15/hour.

There are several routes of training for land surveyors. Some people become surveyors with a high school diploma and a combination of college course work and on-the-job training, usually working several years as a rod man or surveyor's helper and then as an instrument man. Some complete a four-year surveyor's apprenticeship or graduate from a four-year college program in land surveying or engineering, plus have two years of experience.

Registered Nurses

Employment outlook for registered nurses (RN's) depends on expansion of health care services; extension of prepayment programs for hospitalization and medical care; and increased interest in preventive medicine, rehabilitation of the handicapped, home care, and long-term care services. Hospitals have implemented Title VI, amendment to the Social Security Act, which provides for diagnostic-related group (DRG) payments for Medicare inpatient hospital services. The reimbursement system is by diagnosis, not hospital stay. The actual effects on nurses are not yet known. However, possible effects include: 1) discharging patients sooner, resulting in a decreased need for nurses but a greater need for community/home health nursing services; or 2) hiring more RN's whose educational backgrounds are more extensive, allowing greater responsibility in treating the patient; or 3) replacing nurses with licensed technicians.

Employment prospects are good for those registered nurses with supervisory experience or specialty training in areas such as intensive, coronary, emergency room, and psychiatric care. There is also a need for more nurses with bachelor's degrees. Applicants willing to work part-time or evening and night shifts improve their chances for getting a job.

Registered nurses must be licensed by the state board of nursing. To be licensed, applicants must pass a national council licensure examination after completing a state approved program at a school offering a registered nursing program. The licensing fee for registered nurses is $80 by endorsement (out of state) and $75 by exam. An annual renewal fee of $40 is required. For more information contact Tina Holmquist, Licensing Secretary, Board of Nursing Staff, 2223 Warren Ave., Suite 1, Cheyenne, WY 82002, (307) 777-7601.

Beginning salaries for registered nurses in Wyoming range from $1,375-1,550/month. Maximum wages are around $2,045/month.

For more information about these and other occupations, contact Tammy Argyle, Wyoming Career Information System, P.O. Box 3808, University Station, Laramie, WY 82071, (307) 766-6189.

Tammy Argyle, Wyoming
Career Information System

# #

Wyoming Coincident Indicators Index

The Wyoming economy improved somewhat in fourth quarter 1985; however, performance over the entire year was rather dismal. The Wyoming economy is measured by the Wyoming Coincident Indicators Index (WCII) and is derived using economic variables whose movements coincide with movements in the overall economy. It is computed quarterly by the Division of Research and Statistics, Department of Administration and Fiscal Control (DAFC).

The WCII is a composite index which uses four economic variables: 1) Wyoming total sales and use tax collections in 1972 dollars; 2) Wyoming state total insured wages paid in 1972 dollars; 3) Wyoming state total employment; and 4) an industry index comprised of one economic variable from each of Wyoming's three major industries. The three industries are agriculture, mining, and tourism, and the respective variables are: 1) prices received by Wyoming farmers and ranchers for all commodities; 2) Wyoming drilling rig count; and 3) Wyoming motor fuel gallonage sales. The historical period over which the index is calculated is January 1972 to June 1985.

Presented on the accompanying graph are the plots for three times series: one for the index using seasonally adjusted data, one for the index using data which has not been seasonally adjusted, and one for the U.S. Coincident Indicator Index. The unadjusted index is presented to show the seasonality of the Wyoming economy. The U.S. index is shown in order that it might be compared to the Wyoming index. The more important Wyoming index, and the one with which all further analysis and description will be concerned, is the seasonally adjusted index. In this index, turns up and down are caused by factors other than seasonality. The base month is January 1972, which has an index value of 100. An index value doesn't have any meaning in and of itself but is valid only when compared to another value from the same index.

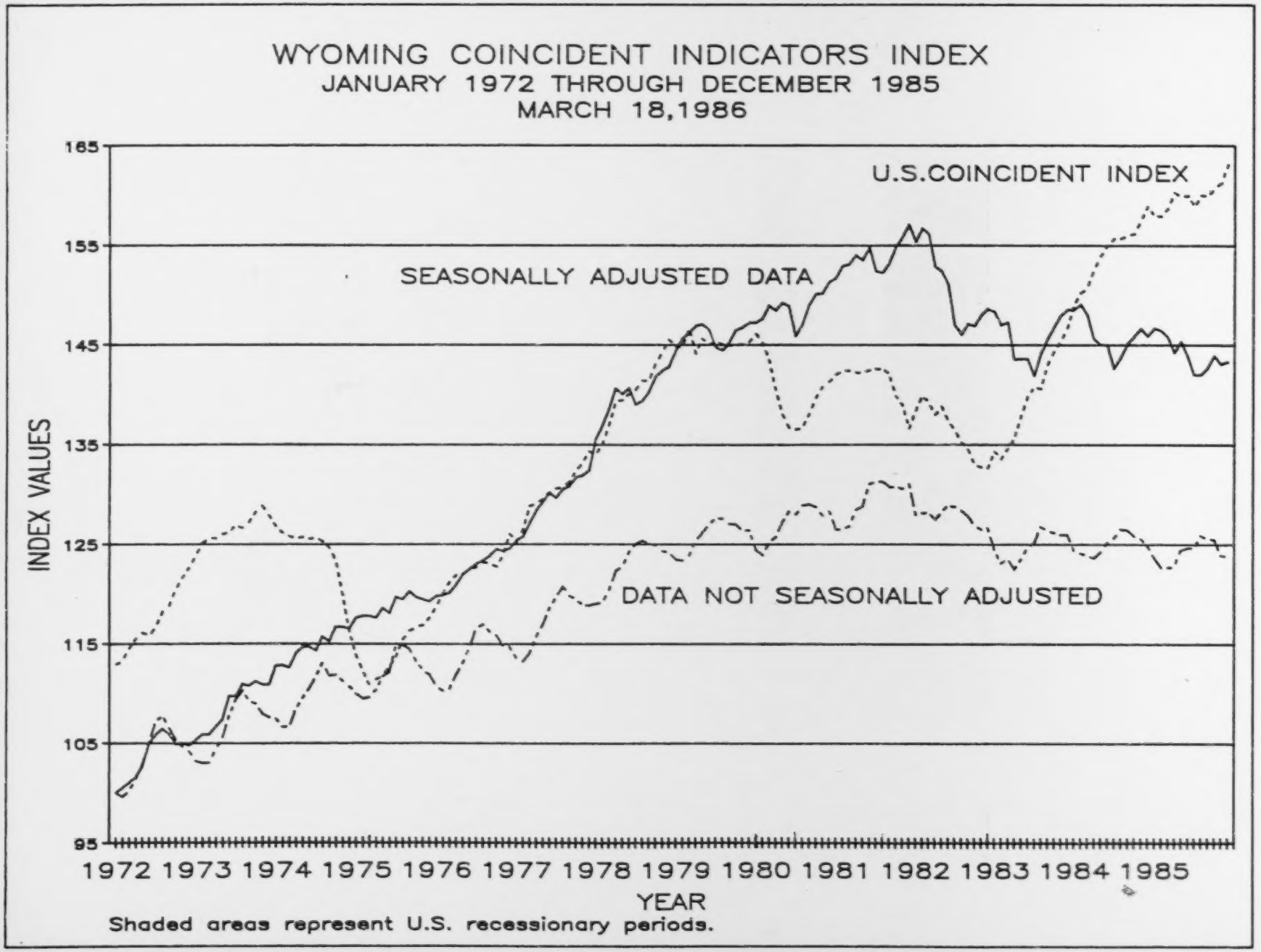
Gains in fourth quarter 1985 were led by wages and sales tax revenues. While these two variables did not register steady gains throughout the quarter, overall the showed improvement over third quarter 1985 and fourth quarter 1984. Employment, gasoline sales, rig count, and agricultural prices were all generally down from third quarter 1985 and fourth quarter 1984 levels.

For the year, the index showed a decline from 146.69 in January to 143.33 in December, a 2.3 percent decrease. The biggest drops in the index came in the first nine months of the year, with gains being made from September through December. Sales tax collections and wages were up in 1985 compared to 1984, while gasoline sales, rig count, and agricultural prices were generally down. Employment held its own the first half of the year, but during the last four months of the year, employment was significantly lower than last year's employment.

Indications for 1986 are generally not good. Several major construction projects are winding down and plans for additional construction are uncertain. With the price of oil being driven down, the employment outlook in the oil and gas sector is not too bright. Even with a good tourist season and a rebound in agricultural prices, the Wyoming economy will not show much improvement in 1986.

Steve Sommers, DAFC

# #


WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1972 THROUGH DECEMBER 1985
MARCH 18,1986
U.S.COINCIDENT INDEX
SEASONALLY ADJUSTED DATA
DATA NOT SEASONALLY ADJUSTED
INDEX VALUES
165
155
145
135
125
115
105
95
1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985
YEAR
Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

Industry Profile

A Wyoming Sheep Review

INTRODUCTION

The romantic era of the cattleman has left an indelible imprint on Wyoming. It is, after all, nicknamed the "Cowboy State." By the turn of the century, however, it could be argued that while cattlemen retained the mystique, sheepmen were the greater economic force. In 1909, over 6 million sheep populated the high plains, compared to only 765,000 cattle. Even as late as 1934, sheep outnumbered cattle on the high plains by a margin of nearly four to one. In the same year, the percentage of gross farm income derived from sheep and wool was 37 percent, compared to 28 percent for cattle and calves. Indeed, during the past 50 years, the weight of gross farm income did not decidedly shift from sheep to cattle until the Second World War.

The purpose of this article is to examine the sheep industry in Wyoming. This will be accomplished first by developing a historical overview of the industry, and then by examining contemporary trends and issues.

HISTORY

Like cattle, sheep were introduced to the New World by early explorers. In 1493, Columbus returned to the New World with settlers and livestock for two colonies in Santo Domingo and Cuba. From these bases, Cortez set out to conquer Mexico. In the process, he became America's first ranchero, establishing large flocks in the valley of Oaxaca.

In 1549, Franciso de Coronado set out in search of the legendary "seven golden cities of Cibola." Coranado explored what is today the American Southwest, bringing sheep with him to feed his troops. Other Spanish explorers and settlers followed, establishing new ranches and introducing more sheep. During the next 200 years, Spanish settlers continued to settle the new lands until sheep could be found from Florida to California.

On the East Coast, Dutch and English settlers established a wool industry. The early farmers wore coarse woolen garments for protection against the harsh winters. British laws attempted to prohibit these household industries in order to protect the English wool industry from competition. As the spirit of independence grew, however, American colonists made a point of wearing homespun wool garments in preference to fine English broadcloth. Early American wool growers included both George Washington and Thomas Jefferson. When British imports were cut off during the Revolutionary War, American mills sprang up to meet the needs of the new republic. After the war, weavers and other related craftsmen from abroad were offered immediate citizenship as an inducement to help build the American wool industry.

In the West, the California Gold Rush of 1849 provided an impetus to the spread of sheep. The sale of sheep became so profitable that frontiersmen braved many hardships to drive flocks to the West Coast. In 1852, "Uncle Dick" Wootton drove 9,000 sheep from Taos, New Mexico, to California. The journey took a year to complete. Along the way, Wootton encountered many obstacles, at one point wrestling a Ute Indian chief for the right to drive his band through Ute country. More than 8,900 sheep survived the drive, which Wootton sold at trail's end for more than $50,000. While steamships and railroads provided better transportation links in later years, sheep drives still continued until the end of the 19th century.

During the 1860s and the 1870s, the sheep migration trend was towards the Rocky Mountains. Later, the Nevada, Utah, and Idaho areas were discovered as excellent sheep raising areas. Shepherds moved in and ranches were established. After these areas had been basically settled and established, a "few more wandering pioneers" looked east to Wyoming, Montana, Colorado and the Dakotas.

The first sheep production in Wyoming could probably be attributed to Jim Bridger. Fort Bridger, in southwest Wyoming, had a flock of sheep in about 1846. Convinced that sheep could be raised on the Wyoming range, the "real father of sheep production in Wyoming," Judge William A. Carter of Virginia, settled at Fort Bridger and began sheep-raising as a serious business (around 1867).

The expansion of the sheep industry in Wyoming was greatly stimulated with the completion of the railroad. By 1870, sheep began to appear in southeastern Wyoming. About 6,000 head were present in the Albany County area. This part of Wyoming had abundant native grasses, and also had many good creeks, springs, and wells for fresh supplies of water. The growth of the sheep industry in southern

Table 1: Stock Sheep[1] on Wyoming Farms and Ranches, by County, January 1, 1980-85 (Number of Head).

Counties	1980	1981	1982	1983	1984[2]	1985[3]
Albany	7,000	7,500	7,000	8,000	9,000	8,000
Big Horn	64,000	69,000	60,000	56,000	55,000	43,000
Campbell	58,000	69,000	72,000	70,000	70,000	58,000
Carbon	78,000	83,000	84,000	78,000	79,000	60,500
Converse	102,000	104,000	108,000	98,000	102,000	80,200
Crook	34,000	33,000	34,000	32,000	34,000	23,500
Fremont	39,000	40,000	43,000	42,000	41,000	35,000
Goshen	14,000	10,000	9,000	8,000	7,000	6,000
Hot Springs	16,000	14,000	15,000	14,000	14,000	12,500
Johnson	126,000	130,000	126,000	124,000	121,000	96,000
Laramie	28,000	35,000	40,000	37,000	36,000	25,000
Lincoln	25,500	32,000	35,000	32,000	32,000	27,000
Natrona	143,000	130,000	126,000	120,000	118,000	83,000
Niobrara	28,000	25,000	23,000	19,000	20,000	18,000
Park	20,000	16,000	15,000	15,000	18,000	13,000
Platte	4,000	4,000	5,000	4,000	6,000	4,000
Sheridan	20,000	18,000	19,000	17,000	16,000	12,000
Sublette	3,000	7,000	7,000	7,500	8,000	8,000
Sweetwater	44,000	46,000	49,500	46,000	40,000	27,000
Teton	500	500	500	500	500	800
Uinta	50,000	55,000	54,000	53,000	52,000	39,500
Washakie	44,000	46,000	51,000	50,000	63,500	47,000
Weston	12,000	16,000	17,000	19,000	18,000	13,000
Wyoming	960,000	990,000	1,000,000	950,000	960,000	740,000

[1] Portion of all sheep and lambs excluding sheep on feed for slaughter.
[2] Revised.
[3] Preliminary.
Source: Wyoming Crop and Livestock Reporting Service, Wyoming Agricultural Statistics, 1984, 1985.

Wyoming continued in the 1870s. As the 1880s approached, the southwest portion of the state began its own sheep expansion.

The sheep industry in northeastern and northcentral Wyoming was slow in developing. The first flock was introduced to Johnson County by D. A. Kingsbury about 1883. Sheep development in the Big Horn Basin, the last stronghold of the cattle operators, was probably the last and slowest in Wyoming.

Cattlemen were eager to stop the spread of sheep in Wyoming. Since the cattle industry was the first to be established in many areas, cattlemen felt that gave them the right to control all the open ranges. The cattlemen were further convinced that sheep ruined the ranges. In many areas, cattlemen drew imaginary "dead lines" over which sheep were not allowed to cross. Sheepmen usually respected these boundaries. However, in some cases when sheep strayed across these lines, flocks were slaughtered, and in some instances, herders were shot and their sheep wagons destroyed. The feuding between cattlemen and sheepmen culminated in 1909. In the so-called "Ten Sleep Raid," two sheepmen and a herder were killed. Five cattlemen were sentenced to prison as a result.

At the turn of the century, however, cattlemen began to see the value of sheep. Many ranchers began diversifying their operations using sheep and cattle. Sheep numbers in the Big Horn Basin and the Wind River areas grew until there were more sheep than cattle. By the end of the 1890s, there were only 300,000 head of cattle, while the number of sheep had increased to 3.5 million head. This trend can probably be attributed to economics, the cattle and sheep wars, and the change in attitude of Wyoming stockmen.

Sheep numbers in Wyoming have fluctuated widely during the 20th century, in response to adverse market and weather conditions. The number of stock sheep peaked in 1909 at 6,023,000 head.

During World War I, sheep producers were encouraged to increase production. An orchestrated campaign advocated the curtailment of sheep slaughtering and tried to persuade big packers to refrain from purchasing ewes, in the interest of increasing sheep numbers. Retail meat markets on the East Coast participated in the boycott, posting signs that read "eat no lamb" and "eat no veal." Restaurants and even railroads eliminated lamb from their menus.

The effects of the boycott, however, were counterproductive. The lamb market broke; packers estimated the "raise-more-sheep" effort actually cost producers $1 per hundred weight or more, thus reducing the incentive to increase production.

Wool prices were also a matter of concern during World War I. Armies required wool for clothing and uniforms. With the increase in demand, it appeared as though wool prices would exceed the 75-cent mark. As a result, the U.S. Government decided to fix the price of wool for the duration of the war.

By 1924, that number had declined to 2,432,000. In 1925, however, another upswing occurred and continued through 1932, when stock sheep numbers reached 3,792,000 head. Drought conditions between 1933 and 1936 forced another decline in numbers, followed by an upsurge until 1937. Thereafter, stock sheep numbers continued to increase, reaching 3,250,000 head by 1942.

During the Second World War, production costs in the sheep industry increased rapidly due to a scarcity of labor, and stock sheep numbers decreased. Many sheepmen reduced their herds or switched to cattle production during this period. Between 1942 and 1950, sheep numbers in Wyoming fell by almost half, declining to 1,841,000 head by January 1, 1950. This was the smallest number of sheep in Wyoming since 1895.

During the 1950s, sheep numbers continued to fluctuate. By 1955, however, favorable feed conditions helped initiate a rebuilding of stock sheep numbers. By 1960, stock sheep numbers had increased to 2,248,000 head.

Since 1960, the sheep industry has generally been in a state of decline. In 1974, researchers at the University of Wyoming and the U.S. Department of Agriculture conducted a study to determine the most prevalent reasons cited by sheepmen for ceasing their operations. During the summer of 1974, 77 producers, stratified by size of operations, were interviewed (from a population of 339 Wyoming sheepmen with over 100 head of sheep who had quit the sheep business during the period between January 1968 and July 1974). The operators were asked to list the factors they considered to be important in their decisions to cease operations.

The results were quite revealing. Among the large range-sheep operators (operations with more than 2,500 head), 31 percent cited predation losses, 30 percent cited labor problems, and 12 percent cited poor lamb or wool prices. Others cited age or shifts to cattle as reasons for discontinuing sheep.

Among small range-sheep operators (operations with 1,000 to 2,499 head), the results were similar. Thirty-one percent cited predation losses, 24 percent cited labor problems, and 14 percent cited poor lamb or wool prices.

Among farm-flock operators (operations with 100 to 199 head), the results were somewhat different, although predation losses once again weighed heavily into the decision to cease operations. Among farm-flock operators, 27 percent cited predations losses, 18 percent cited poor lamb or wool prices, 14 percent cited operator age, and 13 percent cited labor problems.

In their final report, entitled "Decline in the Wyoming Sheep Industry--A Partial Explanation" (March 1976), the study group concluded:

> "Predators have long been a hazard in the production of sheep and represent a definite problem in recent years for many but not all Wyoming sheep operators. Twenty-eight percent of the points given by sheepmen for quitting were predator losses. Rated second in importance was labor problems, which received 16 percent of the total. Since herding labor and lambing labor are difficult to obtain, many Wyoming sheepmen have fenced much of their range. They run sheep under fence without a herder to protect them and many hire no lambing labor. These management changes increase losses by predators and also increase the usual death losses of newly born lambs."

The study also noted that at the time, "Most operators who quit sheep production firmly believe their resources would give better earnings in other enterprises," notably, in the production of cattle, since cattle required less labor and were not affected as much by predators. Since the study was conducted, however, much has changed in the cattle industry, most of it for the worse. In fact, under today's market conditions, some sheep industry spokesmen detect a movement away from cattle and back into sheep production.

The decade of the 1980s opened with the state showing some improvements in stock sheep inventories. On January 1, 1983, stock sheep numbers stood at 950,000 head, a total among all states surpassed only by Texas. By January 1, 1984, sheep and lambs had risen by 3 percent over year-earlier figures. However, a widespread blizzard in late April 1984 wrecked havoc on the industry. The storm figured prominently in a 21-percent decline in the state's sheep and lamb inventory.

The total number of sheep and lambs on Wyoming farms and ranches stood at 860,000 head as of January 1, 1985, including 740,000 stock sheep and 120,000 sheep and lambs on feed for slaughter. The decline in inventory numbers dropped Wyoming to third place among all states in sheep and lamb production.

On January 1, 1985, Johnson County had the largest number of stock sheep among Wyoming counties with 96,000 head. This represented a 21 percent decrease from the same period in 1984. Natrona County ranked second, followed by Converse County and Carbon County.

SHEEP AND LAMB LOSSES

Historically, the sheep industry often has been at the focal point of controversy regarding livestock losses to predators. At times, however, the weather can be an even more important cause of losses. According to Wyoming Crop & Livestock Reporting Service estimates, for example, 228,700 head of sheep, or 63.6 percent of the total number lost in the state, were lost due to weather conditions during 1984. In late April, a three-day blizzard proved to be especially devastating, catching northern Wyoming producers at a time when most of the stock had been sheared and the early phases of lambing season had commenced. The heavy losses suffered during the storm contributed to a 21-percent decline in the state's sheep and lamb inventory. The dollar value of the losses was estimated at over $7 million.

These dramatic figures point out the role weather plays in sheep management. Winter weather affects the timing and success of breeding, and thus the date of lambing. The severity of winter weather also affects the physical condition of pregnant ewes, their productivity, and even their survival rate. Spring weather can be just as important, especially with respect to new-born lambs.

Weather is not always the major cause of sheep and lamb losses, however. From 1979 to 1983, the percentage of total losses attributed to weather by the Crop & Livestock Reporting Service was less significant than estimates of losses from other causes, including predators. In 1984, it was estimated that 81,800 head were lost in Wyoming because of predators. The dollar value of these losses (due to coyotes, fox, eagles, dogs, bears, bobcats, and other predators) was estimated to be $3,735,930. During the period from 1979 to 1983, the percentage of total losses attributed to predators exceeded 40 percent. For each year during the period, predators were estimated to be the major source of sheep and lamb losses.

A study conducted by James Tigner and Gary

Larson entitled, "Sheep Losses on Selected Ranches in Southern Wyoming," explored sheep deaths attributable to various predators. The manner in which each predator species killed sheep was found to be quite distinctive. These findings were coupled with clues such as animal sign at the scene in determining which predators were the most prevalent.

In general, it was found that coyotes attacked ewes at the throat and lambs at the head or throat, or both, depending upon the size of the lamb. Golden eagles in the study attacked only smaller lambs, with the talons entering along the back and sides. Black bears appeared even less selective than coyotes or eagles. Due mainly to their size, black bears took ewes almost as readily as lambs and generally inflicted much greater anatomical damage than coyotes.

Bobcats killed a few lambs, leaving distinctive claw marks on their prey. Domestic dogs also killed some sheep in the study after their rather messy fashion. Dogs were apt to bite the sheep almost anywhere and often only injured the victim.

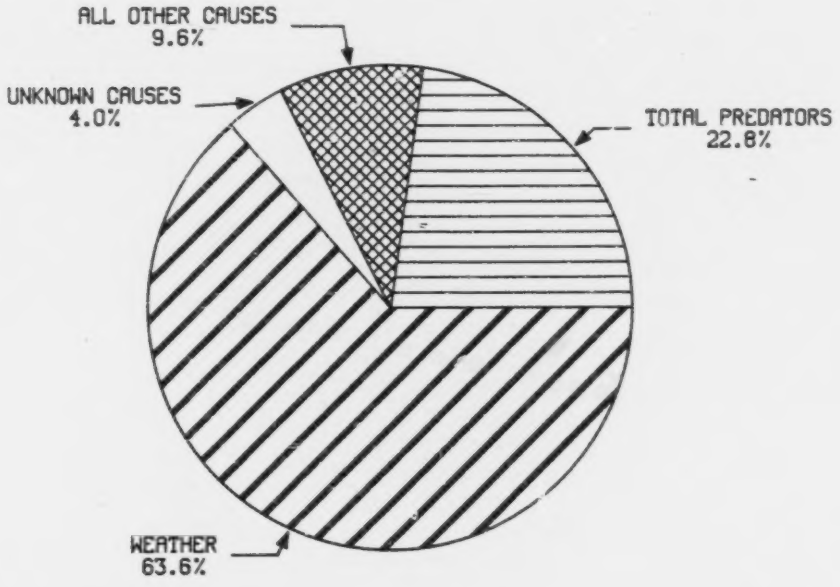
Other causes of sheep losses might include disease, poisoning, theft, and age. In the pie chart accompanying this article, "unknown causes" are defined as unidentifiable losses which might be due to predators, weather, disease, and the like. "All other causes" include identifiable losses due to disease, poison, lambing complications, old age, and similar factors. In 1984, the dollar value of losses arising from all causes was estimated at $12,707,250, a rise of 116 percent in the estimated loss for 1983.

Sheep producers and their critics have conflicting points of view regarding the extent of predator losses and courses of action that should be taken to prevent such losses. Sheepmen claim predator losses are severe and that the industry cannot survive without effective predator control. Critics, on the other hand, claim predator losses are exaggerated and that predator control practices pose real dangers to the environment. From the standpoint of sheepmen, the main villain in the predator control controversy is usually the coyote.

That coyotes are resilient there can be no doubt. A wide variety of tactics have been thrown against them, seemingly with little lasting effect. The list of control methods employed have included (but certainly have not been limited to) shooting, poison baits, gas exploders, guard dogs, aerial hunting, herders, even llamas and billy goats. Recently, the federal government once again sanctioned the use of compound 1080 for coyote control, this time in sheep collars. The collars consist of two poison-filled reservoirs, which take advantage of the coyote's neck-attacking behavior. Some studies suggest that better

SHEEP AND LAMB LOSSES TO ALL CAUSES

WYOMING 1984



Wyoming Crop and Livestock Reporting Service,

WYOMING AGRICULTURAL STATISTICS, 1985

than 70 percent of sheep losses attributable to predators are related to coyotes. In a 1978 study, the U.S. Fish and Wildlife Service estimated that sheep producers in 17 western states suffered a net loss of $13 million due to coyote predation, with an additional impact of $4 million to consumers as a result of additional costs.

Products and Markets

Essentially, every part of a sheep is marketed. However, the major products are wool, lamb and mutton, and pelts. During the late 1800s, the wool industry was among the nation's most important sources of internal revenue. According to the U.S. Revenue Commission, for fiscal year 1865, receipts for woolen fabrics and wool manufacturers were exceeded on the list of taxed articles only by such things as distilled liquors, iron and iron manufacturers, and manufactured tobacco.

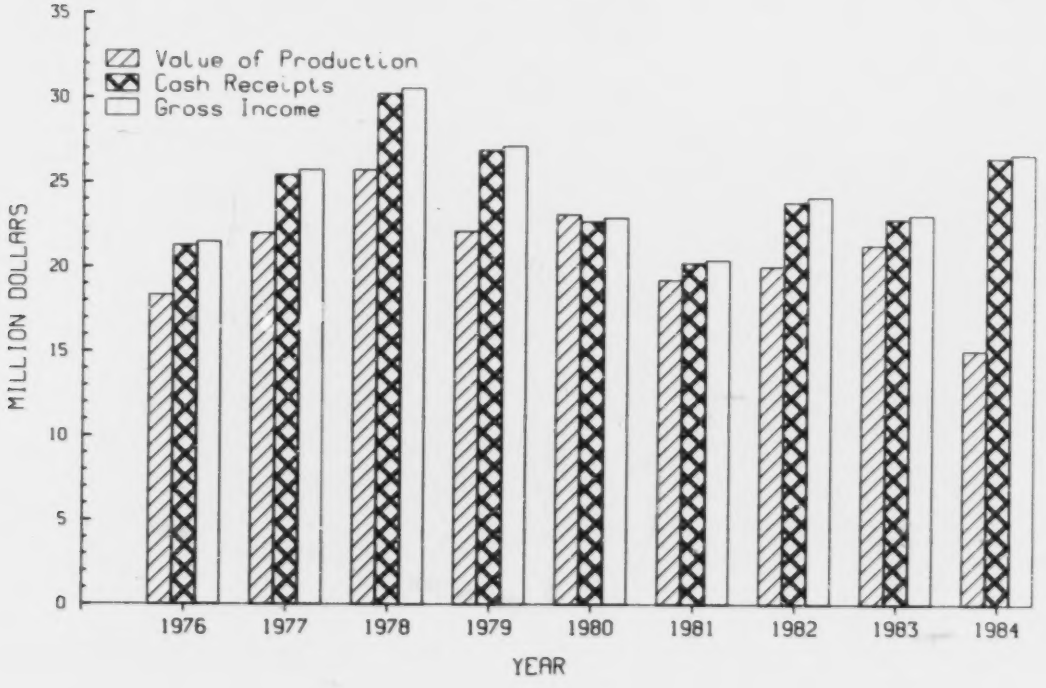
Prior to 1900, wool was the only appreciable sources of revenue for sheep owners. Owners gained only a secondary source of income from the sale of meat. For the most part, ewe lambs were held over for replacement purposes, with a secondary recovery value in meat. Wether lambs were retained for wool, with some secondary recovery in meat as the animals lost their value as wool producers.

In December 1865, wool growers and manufacturers met for the first time to discuss problems affecting the industry. A major topic of conversation at the meeting was the "one-third shrinkage rule." Over the years, the custom had developed of giving sheep annual baths because when the wool was not washed, it was customary for buyers to lower the price by a third. Producers bitterly complained about the practice.

Major sources of concern during the early days of the sheep industry were wool imports and the tariff system. As it is today, adequate tariff protection was considered essential for a healthy and prosperous industry. To a large extent, the National Wool Growers Association was organized to address import and tariff concerns.

Over the years, the wool growers of America have waged many campaigns to uphold their objectives with respect to imports and tariffs. The Wood Tariff Bill, for instance, initially called for a uniform 35 percent ad valorem duty on wool and woolens. The bill was narrowly defeated, which led industry leaders to press for a commission to investigate wool import tariffs. Due in large measure to pressure from the wool industry, the first tariff commission in U.S. history was formed in 1882. When a tariff was finally enacted, it was smaller than had been recommended by the

SHEEP AND LAMBS: PRODUCTION AND INCOME
WYOMING



commission.

Wool growers, however, continued their fight for full protection. Despite such efforts, wool was placed on the list of free imports under the Wilson-Gorman Act of 1894. The compensatory duties on woolen goods were removed and a schedule consisting only of ad valorem rates was established. In 1897, the Dingley Tariff Bill established a duty on class I or clothing wools of 11 cents per pound and double that rate on washed wool.

When the U.S. entered the First World War, talk of tariffs was abandoned. But when the war ended, the tariff fight began again. In December 1920, Senator Reed Smoot introduced a bill providing for a halt to all wool and wool manufacturers imports. When it became clear that such severe restrictions stood little chance, however, the Fordney Emergency Tariff Bill was substituted and became law on May 27, 1921. The new law placed duties on many agricultural commodities which had been on the free list, including sugar, lamb, milk, and wheat.

Other tariff legislation followed, including the Smoot-Hawley Act of 1930. The most significant change from the standpoint of wool growers was an increase in duties of virtually every sheep product. The section also provided for a prohibition on imports of meat from foreign countries where foot-and-mouth disease existed.

By 1952, reciprocal trade agreements replaced the older forms of tariff-making. The new era actually commenced when the Reciprocal Trade Agreements Act of 1934 became law. It provided that any adjustments made in duties with one foreign country would apply to all foreign countries, except Cuba (with whom a special treaty had been made in 1902). The U.S. reserved the right, however, to withdraw most-favored-nation treatment if a country set up restrictions that discriminated against U.S. exports. Sheepmen generally opposed this approach to trade and sought to extend the law's provisions to include older forms of specific protection.

One channel of import control, however, did remain open. Under the Agricultural Adjustment Act, provisions were made for the imposition of fees and quotas on imports that impaired the operation of a farm support program. Wool growers sought to apply the section to their products. But the wool growers faced stiff opposition from Congress and President Eisenhower. A study group was organized, and in December 1953, the Department of Agriculture suggested that one method of increasing returns to domestic wool growers would be by use of incentive payments.

Table 2: Major Components of Gross Income from Wyoming Agriculture (Selected Years, 1934-1984).

Year	Livestock: Cattle and Calves	Livestock: Sheep and Lambs	Total Gross Farm Income	Gross Farm Income from: Cattle and Calves	Sheep and Wool	Crops, other livestock and government payments	All Services
	Millions of Head		$ Millions	Percent			
1934	1.0	3.9	41	28	37	35	100
1944	1.0	3.4	102	33	29	38	100
1954	1.2	2.1	136	51	20	29	100
1964	1.3	2.2	168	52	16	32	100
1974	1.7	1.5	410	47	7	46	100
1984	1.4	1.1	671	61	5	34	100

Source: Agricultural Experiment Station, University of Wyoming, Decline in Wyoiming Sheep Industry--A Partial Explanation (March 1976).

Wyoming Crop and Livestock Reporting Service. Wyoming Agricultural Statistics, (1985).

President Eisenhower endorsed the notion, saying such a program would "assure equitable returns to growers and encourage efficient production and marketing." Convinced that there was no hope of tariff relief, wool growers also endorsed the plan. Thus, the National Wool Act of 1954 became law.

The National Wool Act recognized wool as an essential and strategic commodity not produced in sufficient quantities and grades to meet domestic needs, and declared that it would be "the policy of Congress, as a measure of national security and in promotion of the general economic welfare, to encourage the annual domestic production of approximately 300 million pounds of shorn wool, grease basis, at prices fair to both producers and consumers in a manner which shall have the least adverse effects upon foreign trade."

In recent years, the sheep industry has found itself faced with substantial import competition. The strength of the dollar overseas had a dramatic effect on the wool market during 1984. Such countries as South Africa, Argentina, Australia, and New Zealand were thus able to supply raw wool at least as cheaply as domestic producers. In addition, general economic conditions in the U.S. meant many domestic mills did not increase wool usage.

Perhaps the most striking impact of the strong dollar overseas during 1984 can be seen in the level of imports for the year. During 1984, total textile imports were 40.2 percent higher than in 1983, and 87.3 percent higher than in 1982. The large increase in textile imports reduced the number of orders received by U.S. mills, and at the same time, reduced the demand for wool. While the value of the dollar has fallen nearly 30 percent against other major currencies during the past year, most economists seem to agree that the lower dollar value will not affect the tide of imports until at least the second half of 1986, including the flow of imported wool products. Raw wool prices during 1985 averaged 15 percent to 20 percent lower than 1984 levels because of reduced mill demand.

Sheep as a meat source did not become important until the late 1800s. At first, mutton was the major meat product. It was not until about 1920 that lamb also emerged as a viable product. In a speech before the National Wool Growers in 1903, Francis E. Warren said of marketing meat products of sheep: "We seem to have become a mutton-eating nation during the past two decades. I remember some 20 years ago...when we were permitting our old ewes to die on the range because they were of little or no value, and we were allowing our wethers to become aged--there was no market at Omaha, and scarcely one at Chicago."

Sheep were also discriminated against by the principal stockyard companies. Stockyard charges were greater for sheep than for any other class of livestock. Charges in early stockyards were about $6 per car for cattle, horses, and hogs, while charges for sheep ranged from $10 to $18 per car.

Like wool imports, meat imports have been a source of controversy among sheep producers. The Smoot-Hawley Act of 1930 placed a duty of $3 per head on live sheep and lambs, 5 cents per pound on dressed mutton, and 7 cents per pound on dressed lamb. These duties were in effect until 1943 when a trade agreement with Mexico lowered the duty on live sheep and lambs to $1.50. Duties were further lowered by the Torquay Trade Conference in 1951 and the Geneva Trade Agreement. As a result, the U.S. market became increasingly attractive to exporting nations such as Australia, New Zealand, and Canada.

Nations "down under" in particular have emerged as powerful competition to the domestic sheep industry. In 1955, over 40,000 pounds of lamb chops and boned roasts from New Zealand were being experimentally marketed by two major meat packers. By then, advances in technology had eliminated many barriers in transportation and packaging.

In 1958, a variety of livestock interests began investigating problems arising from imported meats. In the meantime, imports had increased spectacularly. During 1955, imports of lamb, mutton, and goat meat totaled some 2,252,000 pounds; by 1958, that figure had climbed to 23,976,000 pounds.

The controversy over meat imports continues. In 1984 and 1985, four petitions were filed with the International Trade Commission and the U.S. Department of Commerce to impose duties on selected meat imports, with sheep and lamb producers seeking to limit imports of frozen lamb from New Zealand.

Lamb and mutton imports for 1985 totaled 34.7 million pounds, at their highest levels since 1979. The amount of fresh chilled or frozen lamb was up 74 percent over 1984, while fresh chilled or frozen mutton was up 183 percent. In 1985, only Canada, Australia, and New Zealand imported lamb and mutton to the U.S. New Zealand continues to be the largest importer of sheep meat products, although Australia recently initiated a campaign to increase its share of the U.S. market. With reduced lamb supplies and prices in the same range as 1985, competition in the mutton and lamb markets is expected to remain keen through the current year.

The marketability of pelts from Wyoming sheep has been greatly improved by the state's sheep ked control program. The Agricultural Extension Service of the University of Wyoming and Wyoming Wool Growers Association started a five-year program in 1984 to make Wyoming the first ked-free state in the nation. The program is aimed at eliminating the sheep ked (often referred to as the common sheep tick) from sheep in Wyoming in order to improve the general health of the sheep, to improve the quantity and quality of the wool clip, and to improve the quality of the pelt.

The sheep ked, a dark-colored, wingless fly about ¼-inch long, lives in the fleece of a sheep, close to the skin. It is specific to sheep and cannot live on any other host animal. With heavy ked infestation, there is a reduction in the dressed carcass weight of lambs, a reduction in fleece weight, and a reduction in clean yield of wool, all of which lower producers' returns. Keds can even

cause death when full-fleeced, pregnant ewes rub their backs to relieve the irritation, and then cannot get on their feet (called "back-loss").

The most severe damage caused by ked infestations is a skin condition called "cockle." This is a blemish, or rash, resulting from the bite of the insect. Because these spots cannot be softened, sueded, or dyed properly, the result is a defect on the leather which makes the skin less useful to garment makers. Grading yields of pelts can be increased up to 31 percent when cockle is eliminated. Therefore, cockle-free pelts can bring Wyoming producers thousands of dollars in added income.

Now in the third year of its scheduled five-year duration, the ked-free program is proving to be an economic success. It is estimated that about 80 percent of all sheep in Wyoming were treated for keds in 1985, making about 400,000 ked-free lambs available for market. Another encouraging development is that the Wool Growers Associations of Montana, Iowa, Colorado, and South Dakota have decided to follow the lead of the Wyoming program.

S.T. Mast and Ruth Tebbutt, IPR

\# \#

Selected Bibliography

Agricultural Extension Service, University of Wyoming. The Story of Wool.

American Sheep Producers Council, Inc. Situation Outlook Report (1985-1986).

Andelt, W.F. 1986. "Coyote Predation in North America." In M. Novak and J. Baker, eds. Wild Furbearer Management and Conservation in North America. Ontario Ministry of Natural Resources and Ontario Trappers Association, Toronto, Ontario. (In press)

Edgar, Bob and Turnell, Jack. Lady of a Legend, Stockade Publishing (May, 1979).

Hartley, Daniel R. and Stevens, Delwin M. Decline in Wyoming Sheep Industry--A Partial Explanation, Agricultural Experiment Station, University of Wyoming (March, 1976).

Larson, Gary E. and Tigner, James R. "Sheep Losses on Selected Ranches in Southern Wyoming," Journal of Range Management (July, 1977).

National Wool Growers Association. Men, Sheep and 100 Years (January, 1965).

Nel, Hans E. "Wyoming's Ked-Free State Program," Animal Science Roundup Report, University of Wyoming (1985).

Stevens, Delwin M. An Economic Analysis of Wyoming's Sheep Industry (1960, 1964, 1968), Agricultural Experiment Station, University of Wyoming (June, 1971).

Wyoming Crop and Livestock Reporting Service. Wyoming Agricultural Statistics (various years).

Wyoming Department of Agriculture, Division of Agriculture Planning and Development. Wyoming Agricultural Production: A History (January, 1965).

Hopeful Signs Exist for Sheep Industry

(The following is excerpted from an interview with Carolyn Paseneaux, executive director of the Wyoming Wool Growers Association. The interview, which was conducted in March, highlights some of the challenges faced by the state's sheep industry. Editing is included for the sake of clarity.)

WQU: What is the general scope of the sheep industry in Wyoming?

Paseneaux: Wyoming is the third largest sheep-producing state in the nation. Texas is first and California is second. We are the largest range-sheep state in the nation. This, or course, is because of our large industry in the western half of the state, where the public lands are located.

WQU: Have sheep numbers remained relatively constant in recent years?

Paseneaux: Well, there have been shifts. I don't know if these shifts have been due as much to the economy as to the weather. Two springs ago, we lost a quarter-million sheep in the state because of the weather. I think with an improved economy and the price of lamb as it relates to beef prices, that you are going to see an increase in sheep numbers. People are looking for sheep now, not just from this state but from many states. They are calling and looking for 200, 500, and on occasion even a whole band of sheep.

WQU: Does the Wyoming industry consist of both farm flocks and range bands?

Paseneaux: Yes. The range herds would be about 1,000 or more. Farm flocks are smaller groups. We have a lot of grass in Wyoming for the range herds. As a matter of fact, I would say that Wyoming should utilize those grasses even more. Of course, we have wildlife that also utilize the grass, but the terrain and grasses are very well-suited to sheep.

WQU: You mentioned the favorable price of lamb versus the price of beef in the current market. What accounts for that?

Paseneaux: The current economics situation has forced a glut in the cattle market which has brought the price of cattle down, and of course, the health-conscious consumer is now looking at red meat with disdain. Lamb has a name for being low in cholesterol and fat. So, if you talk about those people who are going to buy meat, many are looking at the health part of it and looking at lamb.

WQU: Are lamb prices better now than they were a year ago?

Paseneaux: Prices have fluctuated in both the meat aspect of the industry and in the wool aspect. The time of year also makes a difference. But lamb has stayed more stable than beef. In years past, lamb prices have followed beef prices, but that has not been true in the last several years.

WQU: Would it be fair to say sheep producers are doing better than cattle producers?

Paseneaux: I would say as far as prices received to the producer, yes they are. In fact, as I mentioned earlier we have people looking for several hundred head of sheep at a time. Not just lambs, but breeding ewes, and many of those people are cattle producers.

WQU: Are there many mixed cattle-sheep herds in the state?

Paseneaux: There are becoming more, I think. In years past, the tale goes that people raised sheep, made some money, and got into the cattle business. Then they became cowboys and got rid of their sheep. Now people seem to be going back into sheep because that's where the money is. There is a realization that it is good to have both cattle and sheep because of the compatibility of multispecies grazing. One species does not compete for all the same kind of grasses and forbs that the other likes, so producers are finding it is economical to have both.

WQU: How would you characterize the general state of the sheep industry, especially with respect to other segments of agriculture?

Paseneaux: I saw a report recently that said the debt-to-asset ratio for the sheep industry was much lower than for any other segment of agriculture. I did not know that. There is a double income from sheep. You can sell their wool and you can sell the meat. In addition to those two factors, you also have something called the "Wool Act," which allows an incentive payment to sheep producers. It is not a subsidy, but an incentive payment. Compared to other commodities covered by the Farm Bill, this is a true incentive payment in that the better your product, the greater the price you are going to receive. The money does not come directly from the U.S. Government out of taxes paid by citizens. It comes from a tariff levied on imported raw wool, or textiles containing wool. The tariff monies

are then put into the incentive payment for wool producers. Other countries subsidize their growers, thus the reason for levying a tariff. The federal treasury receives two dollars for every dollar received by the sheep industry out of the tariff monies. Over the life of the Wool Act over $2.2 billion has gone into the treasury to be used by the federal government.

WQU: Let's discuss some of the challenges facing the industry today. How big a problem are sheep keds?

Paseneaux: Prior to three years ago, it was a very big problem. Although we have always called it a sheep tick, the sheep ked is not a tick, it is a fly. When that little fly bites the sheep, it leaves something called a "cockle." It looks like an acne scar on the hide itself so those skins can only be used in things like seat covers where appearance is not critical. But if you have a skin that is ked-free, you have something of much more value that can be used for fine ladies' clothes, boots, and gloves. Wyoming lambs are some of the largest in the world. Manufacturers are looking for Wyoming skins because they can use whole skins for the side of a coat, whereas in other parts of the world it would take two skins to make the same side.

Wyoming was the first state in the nation to say "we are going to become ked-free in five years." With the help of the university, we have progressed so quickly that we think we have almost licked the problem in the third year. Our producers have received premiums on their ked-free skins on a trial basis. If the program continues, we should become known to the tanners and manufacturers as a ked-free state, and they will continue to pay premiums for our skins.

WQU: How are sheep keds controlled?

Paseneaux: We have been using Ectrin, which is sprayed on. Some producers have put only a small spot of Ectrin on the sheep, and that works also. The grease in the wool disperses it over the entire sheep.

WQU: Is this an expensive process?

Paseneaux: It's about five cents a sheep. That is not much when you think about the weight gain of the sheep, for one thing. This would be a reason to do it even if a premium was not paid for the skin. Sheep often itch because of the ked, so they get down and rub. Their weight gain is not as great when they are fighting the ked; and in addition, the sheep can die if it gets on its back and can't get back up.

WQU: What about indelible marking dyes on wool? Are they still a problem, or is that changing?

Paseneaux: It is gradually changing. The change is because some of the larger mills like Burlington have given us an ultimatum: Change to scourable paint or they will not pay a premium for our wool, even if it is premium quality. In fact, they have threatened to discount our wool if we do not get rid of the unscourable paint. Several companies have come out with scourable paint, but we are getting conflicting reports about how good they are. Many producers say the scourable paint comes off easily, so they have to paint twice a year. The Wyoming Wool Growers would like to work with the university to come up with other means of sheep identification so that we might be able to get rid of sheep brands completely someday. With range herds there is a problem of identification within a herd. With farm flocks it is much easier. Ear tags are easily managed on a small bunch, but much harder on a large herd out in the brush were they tear the tags out.

WQU: Are there other problems related to wool quality?

Paseneaux: The largest problem is the quality of the wool clip. We are trying to educate producers about the necessity of cleaning up their wool. Many things will dirty a clip of wool. For instance, the polypropylene string that is used to tie hay bales breaks off and gets dispursed throughout the wool. When the wool is processed, the plastic threads stay in the cloth. They will not take a dye, therefore contaminating the product. As mentioned previously, paint can also be a problem. Needle grass, hay falling on the animal's back at feeding time, sloppy conditions in the feed yard and soiling of the backside of the sheep all add to a clip of inferior quality. The mills want these things cleaned up. Wyoming has some of the whitest and longest staple wool in the world. It is really lovely. Our fine-wooled sheep, the Rambouillet and the Rambouillet cross, are sought after for the quality of wool they produce, but we do have trouble with out clip. We are beginning to see a price difference between the wool that is carefully put up and that which contains dirt and other materials. Several Wyoming producers are putting up excellent clips and they have received a good price for their wool this year.

WQU: What's the solution?

Paseneaux: Education. Our producers think they should be paid more if they are going to do these things, but it is not going to happen the first few years. They are not going to get

a premium until a buyer begins to see a pattern, that they do have a clean clip and that they are going to be consistent. Other states, like Texas, and other countries, like New Zealand, get rid of the bellies, which are a different grade of wool than the backs. They are actually grading their own wool. They separate the good wool from the inferior wool and they are paid a premium for their efforts.

WQU: Another area of both concern and controversy has been predator control, which is now under the Agriculture Department rather than the U.S. Fish and Wildlife Service. Could you give me a little background?

Paseneaux: There is a longstanding feeling that the Fish and Wildlife Service, within the Interior Department, was at odd purposes with sheep producers when trying to control predators. In fact, their whole mission was in another direction. It was felt by many people in the sheep industry that the USDA would be a much more fitting place for the predator control program. After a long battle, it was turned over to the USDA, just this year in fact. We have been allowed to use compound 1080 on a trial basis to try and control predators, the coyote especially.

WQU: When was 1080 re-introduced?

Paseneaux: In 1985. The program has not yet been instituted in Wyoming. We are gearing up for that. There has to be training as there are many precautions around it. Compound 1080 will be put into collars to be worn by sheep out in the field. The sheep will be sacrificial because they will probably die in the process of killing the coyote. Coyotes are very, very intelligent. One must give them a lot of credit because they are survivors. It is hoped that not only will the 1080 kill some of the coyotes, but because they are so intelligent, they will learn to leave the sheep alone.

WQU: One reason 1080 was banned was because animals other than coyotes fed on the carcasses and died. What precautions are being taken to ensure that magpies or eagles aren't poisoned along with coyotes?

Paseneaux: The residual effect would have something to do with how much 1080 was in an animal's body. In prior times, the compound was put in a dead animal, so the amount a coyote would eat would be much greater than they would get in a pouch on the neck of a sheep. There should be no residual damage at all.

WQU: What if coyotes begin attacking sheep in some other fashion, in the belly for instance?

Paseneaux: A trapper can tell you immediately which animal has attacked and killed a sheep. A mountain lion does it one way, a coyote does it another way, an eagle would do it yet another way. They all attack a different part of the body and rip it open a certain way. A coyote goes for the neck.

WQU: What about other methods of control. There are some suggestions that dogs may be the answer...

Paseneaux: I think you have to use everything you can, and yes, guard dogs are excellent in the right situation. They are territorial and if you have pasture sheep, then you can use the guard dogs. However, in our large range herds that move every day to a new place, guard dogs are not very useful. It depends on the situation. Llamas and mules have been used to protect sheep from predators. It just depends on what someone is willing to think up and try.

WQU: To survive guns, llamas, 1080...coyotes sound rather remarkable.

Paseneaux: That is right. Just incredible creatures. You have to say they are unique and have some admiration for their survival skills, always keeping in mind however that coyotes are devestating to the food and fiber industry upon which humankind depends. Mostly predators prey upon defenseless lambs.

WQU: Will the re-introduction of 1080 be done on a ranch-by-ranch basis, supervised by the USDA?

Paseneaux: Yes. It will be very carefully regulated, and every drop will be accounted for. There will be areas established and limits on usage. It won't be a layman that is using it. Professionals will be trained, and accurate records will be kept.

S.T. Mast, IPR

# #

Basque Herders Fading into History

The duties of a shepherd change little. Flocks must be tended, moved from lowland pastures to high mountain meadows, regardless of time or place. The life is still lonely and often arduous, requiring an uncommon kind of independence and self-reliance.

Among the herdsmen of Wyoming, the Basques are renowned. As a people, they are unique. Their language is ancient, one rich in meaning for all that deals with mountains and forests, the meadows and the flocks. Their culture is like no other, even though they live within the boundaries of both France and Spain. Theirs is the land of the Pyrennes Mountains. They are proud and free-spirited, and probably since before the days of the Roman Empire, they have been herdsmen.

By Basque custom, a family farm is often left to the oldest child; thus, many others have sought better opportunities in America. In 1902, Jean Esponda arrived in Buffalo, fresh from the land of the Pyrennes. He was the first of many Basques who would first herd, and later own, many sheep in the shadow of the Big Horns. Life at first was difficult. Basque families lived in their sheepwagons, modestly outfitted with a double-bed, a drop-down table, and a small stove. But short-term privation could not obscure their dream of acquiring sheep and lands of their own.

As herders became operators, expanding the scope of Wyoming's sheep industry, even more herders were required. However, it was not until the Second World War that a serious shortage of herders developed. Able-bodied men joined the Armed Services or migrated from the open range to war industries in the cities. Once they had moved, many younger people were reluctant to swap the excitement of city life for the loneliness of a sheep camp.

During the war, many herders were recruited from Mexico. The U.S. Government also recognized a need to grant draft-exempt status to many agricultural workers, including sheepherders. Because they were not in uniform, however, herders and others were sometimes ridiculed. Some suggested that they be given an insignia to show that they belonged to a different kind of army--an army of food production battalions.

Basques also continued to supply herders to the domestic industry during the war years. In 1944, the Kern County (California) Wool Growers Association handled the importation of Basque herders for several of its members. With the assistance of Wyoming Senator Joseph O'Mahoney, the U.S. Immigration and Naturalization Service was persuaded to approve the importation of Basque herders for temporary periods under a waiver of the alien contract laws.

After the war, the number of sheep continued to decline, accentuating a trend that had started in the early 1940s. The National Wool Growers Association launched an aggressive campaign to increase production, an integral part of which was to solve the industry's labor shortages.

With the outbreak of the Korean War, sheepherding was again designated a "critical occupation," and authority was granted to provide herders with draft deferments. In addition, legislation that allowed for the importation of an additional 500 herders was passed in 1952. Under the law, when the immigration quota of any country from which sheepherders were needed was filled, herders could still come to the U.S. under special visas. Their numbers would then be deducted from future quota from the country of origin.

Because domestic workers seemed uninterested in sheepherding, problems with labor shortages continued. Sheepherders also turned to other kinds of work, particularly in mining, lumber, and dairying, in increasing numbers. As a result, Congress passed the Immigration and Nationality Act, with the provision that the first 50 percent of an immigration quota allotted to any area would be filled with needed skilled labor. The importation program began on April 1, 1957. Entry permits for herders could be renewed every six months for a period of up to three years. Later, the law was amended so that herders needed to apply for extensions only once a year.

Today, herders continue to be an important part of the sheep industry, and the Basque herders continue to play a role, though a less dominant one than in years past.

James Magagna, president of the Wyoming Wool Growers Association, runs approximately 7,000 head of breeding stock in a farflung region north of Rock Springs. His herders are almost exclusively Basque.

Magagna employs Basque herders throughout the year, though the number varies depending upon the season. Except for lambing season in the spring, the range bands are almost always in motion, moving from winter ranges on the Red Desert to high mountain meadows in the summer.

During the 1950s, many areas of the state shifted toward fenced operations, while in some western regions, the rangelands remained relatively open. "We have stayed with herded types of operations," says Magagna, "so that we probably represent more the way it was done 50 or even 100 years ago, with the sheepwagons out on the desert, and in the summer, with herders living in tents up in the mountains."

The herding routine itself has changed little. Basque herders are with the sheep every day of the year. Two men normally work together, tending between 1,800 and 2,400 sheep. The herder spends most of his time with the sheep, assisted by his herd dogs. He stays with the sheep perhaps three hours in the morning and four hours in the afternoon, depending upon the length of the day. The camp tender takes care of the horses, does the cooking and camp chores, and helps the herder when needed.

Before the Basques, the Magagna crew was composed of Chicanos from New Mexico. They were steady, long-term workers. One man herded for 56 years, starting with James Magagna's grandfather, while another worked 52 years. One Chicano still works on the crew. He has been with the outfit 41 years.

When the Chicano labor source began drying up, the outfit turned to Basque herders. Basques have been the mainstay since the late 1950s. Many come from the same small town in the Basque region of Spain and have been interrelated by family ties.

Magagna will have a full crew for lambing season. Depending upon how long they have been in the U.S., some may return to Spain for a visit after the lambing work is done. In October, others may work in California during that state's busy season, only to return to Wyoming in the spring.

Typically, one or two new men are hired each year. And while the Basques are famous for their skill as herders, Magagna has detected changes in attitude in recent years. The young Basques have been more exposed to the possibilities of a larger world than their fathers and grandfathers. Many have been able to find better economic prospects in industrialized Europe. Thus, they are less likely to be dedicated and single-minded about sheepherding.

"A lot of it is a matter of lifestyle," says Magagna, "and that is why we don't get domestic herders anymore. It is a lifestyle that people do not want. To be honest, I don't think I could take it. I think it is the type of thing that for a three-month summer experience you can find all kinds of people that would love it. But when you talk about a year-round thing, and even a lifetime at it, that is quite a different story."

As a result of economic and social progress, Magagna believes that the Basque herder pool may well dry up in the next 25 years. Already, increasing numbers of South Americans have been imported to herd Wyoming sheep. Magagna admits that he is "more and more inclined to start branching out a little" as a safety measure against future labor shortages.

John Etchepare, an officer in Warren Livestock, says his southeastern Wyoming outfit already includes herders from the U.S., Mexico, Spain, Peru, and Chile. Etchepare says he expects to see very few Basque herders in the future. "They can stay home, or work in industrial Germany, and make about the same money as they can make here," he says.

But to other nationalities, the opportunity to herd sheep in the U.S. still represents a substantial opportunity. Because of the strength of the dollar, Etchepare says the Peruvians can earn in three years herding sheep in the U.S. what it would take them two and a half lifetimes to earn in Peru. He says the type of people recruited are highly employable, many having left jobs to come to the U.S., and are very capable. The Peruvians come from regions of the Andes Mountains and thus are not only accustomed to tending sheep, but they also are accustomed to high altitudes and understand mountain weather.

A herder is entrusted with an investment worth tens of thousands of dollars, and thus, good herders are always in demand. Wile men of other nationalities have come to dominate the herding ranks, Etchepare says top domestic herders never need to worry about unemployment.

"Those types of people are known to everyone," he says. "When they get ready to go to work, they don't sit on an unemployment bench very long."

S.T. Mast, IPR

# #

Rambouillet Breed Foundation of Many Range Flocks

Breeding sheep that are compatible with Wyoming's difficult range conditions has been a continuing challenge for the state's sheepmen.

In the early years, the breeding of heartier stock was helped immeasurably by the advent of land grant colleges and their associated experimental stations. The two major objectives of the land grant colleges, as expressed in the first Morrill Act of 1862, were to teach branches of learning related to agriculture and the mechanical arts. In 1887, Congress passed the Hatch Act, providing for agricultural experiment stations and granting $15,000 for a station's support. Three years later, Congress passed the second Morrill Act, which made an annual appropriation of $25,000 to each college for use solely in agricultural instruction.

Early shows and sales stimulated interest in sheep improvement. Sales became a vehicle whereby "quality" breeding could be exhibited and emulated. Through sales, desirable characteristics could also be transferred from one flock to another in a short period of time. The first National Ram Sale occurred in 1916. Twenty-four hundred sheep were sold for a total of $129,150. Rambouillet rams brought an average price of $154.30, while range rams brought an average price of $39.43.

Since the first National Ram Sale, the quality of sheep has improved and changed in response to consumer demands. The most popular breeds in Wyoming today are the Rambouillet, Targhee, Columbia, Corriedale, Suffolk, and Hampshire breeds.

The Rambouillet is a fine-wooled, white-faced breed developed in France during the 1900s from a line of Spanish Merinos. It is the foundation breed of most western range flocks and is also adapted to farm conditions. The breed has undergone considerable changes. At the first ram sale, according to one observer, Rambouillets could not be sold unless they had three neck folds, wrinkles behind the shoulder, a rosette around the tail, and very greasy wool. If the wool was not greasy enough, a little oil was added. Later, ram standards changed to a smooth body and three heavy neck folds. Still later, the standards changed to a ram with one heavy neck fold and two smaller folds. The modern type is open-faced and free of wrinkles.

Development of the Targhee breed began in 1926, when selected Rambouillet rams were mated with selected ewes of Corriedale-Lincoln rams and Lincoln cross Rambouillet combinations at the Bureau of Animal Industry, U.S. Sheep Experiment Station, at Dubois, Idaho. The Targhee closely resembles the Rambouillet in its ability to adapt to various weather and forage conditions.

Suffolks and Hampshires were first bred in England during the 1800s. Both breeds have undergone many changes. In 1919, the National Wool Growers Association imported the first Suffolks to be sold at the National Ram Sale. The first rams were small, short, fine-boned, and only a few possessed good "black-breed-type heads." Today, the Suffolk can be described as a large, active breed characterized by a jet black head and legs. Rams weigh from 250 to 350 pounds, while ewes weigh from 180 to 350 pounds. The popularity of the Suffolk breed is based on its size, ruggedness, and the growing ability of its lambs.

Columbias were developed in the United States from a cross between the Lincoln and the Rambouillet. As in the case of the Targhee, the original cross was made in 1912 at the U.S Sheep Experiment Station at Dubois, Idaho. Columbias are adapted both to range and farm flock conditions. They possess heavy, medium-wool fleeces with good staple, and high yield-grade carcasses.

The Corriedale is another popular breed found in Wyoming. The Corriedale originated in New Zealand and was developed from Lincoln-Merino crosses. A white-faced, medium-wooled breed, the Corriedales are medium-sized and are noted for their heavy shearing, high-quality fleeces.

S.T. Mast and Ruth Tebbutt, IPR

# #

ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred, or in which existing trends were significantly accentuated, during the latest reporting period).

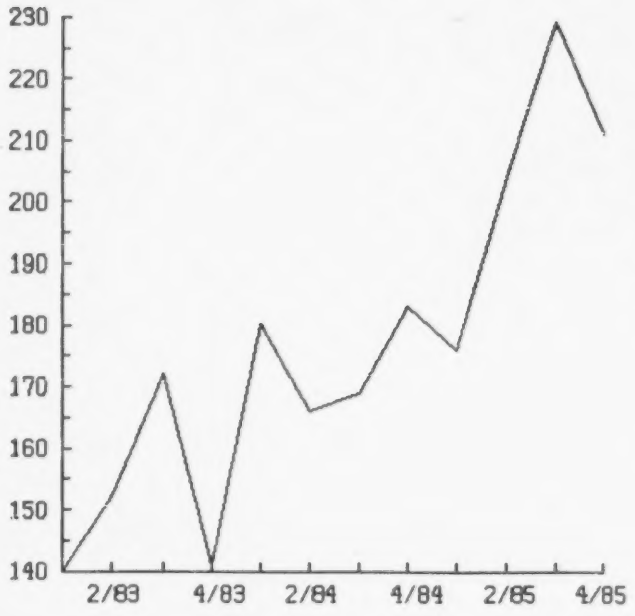
Changes in agricultural, business, and tax collections statistics are among the highlights recorded in the Update's fourth quarter 1985 statistics.

The index of prices received by Wyoming farmers and ranchers for commodities sold during December 1985 was down 14 points from December 1984. At the same time, the index of prices received for livestock fell 23 points below December 1984 levels. The declines in the large livestock sector were only partially offset by a 15-point increase in prices received for crops during the same period.

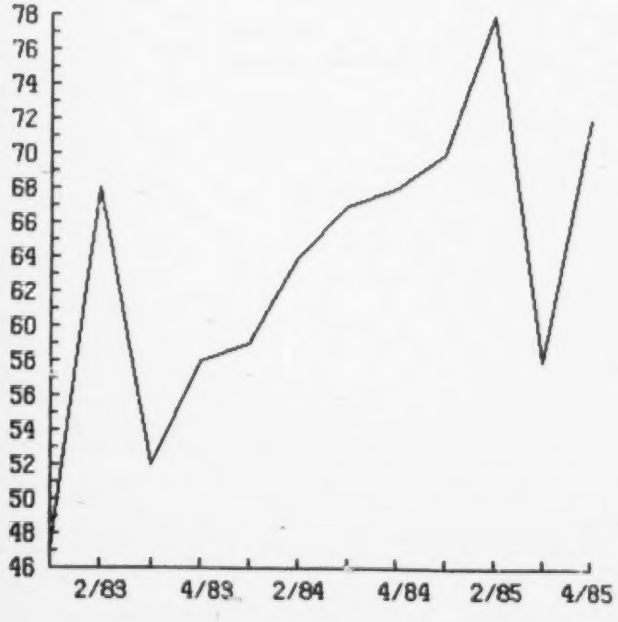
The number of business failures continued to increase during the fourth quarter, while the number of personal bankruptcies fell, ending a rise that culminated with a 12-quarter high in numbers of personal bankruptcies. Both series, however, were still above fourth quarter 1984 levels (5.88 percent higher for business failures and 15.30 percent high for personal bankruptcies).

Statewide sales and use tax collections were up 4.65 percent during the fourth quarter of 1985 compared to the third quarter, perhaps reflecting the traditional increase in business activity during the Christmas Season. Collections for the fourth quarter 1985 were also 10.72 percent higher than for the comparable period of 1984.

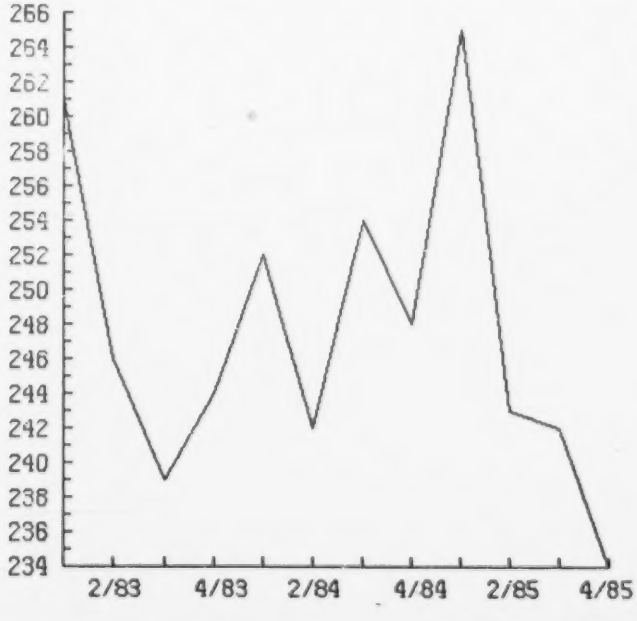
Personal Bankruptcies



Business Failures



Prices Received for all Agricultural Commodities



WYOMING DATA

Table 3: Agriculture[1]

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. Timber Cut in Wyoming National Forests (MBF)	14707.	5208.	35941.	47574.	21261.	7625.	48671.	63055.	23591.	6564.	35705.	57834.
Price Indices[2] (1967=100)												
2. Wyoming Crops, Prices Received-Latest	247.	254.	280.	280.	269.	265.	254.	255.	253.	260.	256.	270.
3. Wyoming Crops, Prices Received-Average	246.	253.	268.	279.	270.	270.	255.	253.	256.	259.	260.	267.
4. U.S. Crops, Prices Received-Latest	234.	239.	260.	262.	267.	276.	260.	240.	242.	236.	216.	226.
5. U.S. Crops, Prices Received-Average	226.	244.	255.	258.	266.	275.	271.	251.	240.	239.	224.	219.
6. Wyoming, All Commodities, Prices Received-Latest	261.	246.	239.	244.	252.	242.	254.	248.	265.	243.	242.	234.
7. Wyoming, All Commodities, Prices Received-Average	249.	253.	233.	239.	251.	250.	246.	249.	256.	253.	237.	243.
8. U.S., All Commodities, Prices Received-Latest	245.	243.	248.	256.	265.	262.	252.	247.	244.	235.	219.	234.
9. U.S., All Commodities, Prices Received-Average	240.	247.	247.	249.	264.	264.	259.	249.	246.	237.	225.	230.
10. Wyoming Livestock, Prices Received-Latest	265.	244.	227.	233.	247.	235.	254.	246.	268.	238.	238.	223.
11. Wyoming Livestock, Prices Received-Average	249.	253.	223.	228.	245.	243.	244.	247.	256.	250.	230.	236.
12. U.S. Livestock, Prices Received-Latest	256.	247.	240.	251.	264.	251.	247.	253.	247.	235.	222.	243.
13. U.S. Livestock, Prices Received-Average	253.	251.	242.	241.	264.	256.	251.	249.	251.	236.	227.	240.
14. Prices Paid by U.S. Farmers-Latest	321.	324.	326.	328.	335.	335.	333.	332.	332.	332.	328.	330.
15. Prices Paid by U.S. Farmers-Average	320.	324.	325.	327.	333.	336.	334.	332.	332.	332.	329.	329.

[1]First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2]The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 4: Banking and Finance

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. Total Bank Loans and Leases Financing Receivables (T$)[1]	*****	*****	*****	*****	2313197.	2359492.	2368731.	2352704.	2356267.	2348277.	2296857.	2226477.
2. Total Bank Deposits (T$)	3537206.	3669552.	3683748.	3789387.	3747828.	3812354.	3790977.	4005456.	3808654.	3908435.	3959810.	4048702.
3. Total Non Interest-Bearing Deposits (T$)[1]	*****	*****	*****	*****	657189.	734297.	723344.	742392.	652223.	643908.	687128.	689811.
4. Savings and Loan Mortgage Loans (T$)[2]	758938.	760041.	775159.	775795.	767125.	775396.	771560.	806660.	780644.	806897.	949722.	929668.
5. Savings and Loan Deposits (T$)	921290.	960250.	966113.	1006927.	1051271.	1087036.	1111213.	1142593.	1161848.	1193339.	1183564.	1166220.
6. Prime Interest Rate[3]	10.50	10.50	11.00	11.00	11.21	12.60	12.97	11.06	10.50	9.78	9.50	9.50

[1]During the first quarter of 1984, the Wyoming State Bank Examiner began publishing it's quarterly report ("The Abstract Report of State and National Banks in Wyoming") in a slightly different format. IPR will therefore be altering the following banking and finance data series: total bank loans and total demand deposits. Beginning in the first quarter of 1984, data for total bank loans will include lease financing receivables; data for total bank demand deposits will be replaced by figures for noninterest-bearing deposits. For comparison, the reader can refer to past issues of the WQU.
[2]Only members of the Federal Home Loan Bank Board are included.
[3]Rate is for the last month of the quarter.

Sources: Series 1-3: Wyoming State Bank Examiner Quarterly Report.
Series 4 and 5: Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

Table 5: Business Conditions

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. New Domestic Corporations	348.	410.	366.	309.	359.	359.	332.	273.	308.	307.	248.	283.
2. New Foreign Corporations	240.	259.	331.	292.	260.	249.	259.	244.	224.	259.	279.	217.
3. Total New Corporations	588.	669.	697.	601.	619.	608.	591.	517.	532.	566.	527.	500.
4. Business Failures	47.	68.	52.	58.	59.	64.	67.	68.	70.	78.	58.	72.
5. Value of Business Failures ($)	6438421.	6400333.	535473.	-8163171.[1]	17789116.	14081414.	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]	8266910.
6. Personal Bankruptcies	140.	152.	172.	141.	180.	166.	169.	183.	176.	204.	229.	211.

[1]Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 6: Construction

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. New Residential Dwelling Units	727.	1044.	1002.	685.	481.	935.	642.	368.	397.	670.	628.	535.
2. Value of Residential Dwellings Constructed (M$)	44.4	70.7	60.3	40.0	28.4	54.4	37.9	23.0	25.3	46.8	42.3	35.4
3. Value of Nonresidential Construction (M$)	37.9	54.4	48.2	59.9	11.5	30.6	36.9	80.0	31.7	75.8	32.1	17.1
4. Building Permits Issued in Selected Wyoming Cities	2762.	3586.	3701.	2138.	2025.	3892.	3546.	2438.	1713.	3315.	3753.	2872.
5. Value of Authorized Construction (T$)	37119.	46402.	68715.	51924.	29471.	42320.	36344.	35282.	23474.	83920.	192451.	15695.
6. Mortgage Interest Rate[1]	12.97	11.90	12.08	11.94	11.56	11.61	12.03	12.05	11.42	11.31	10.69	10.39

[1]Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 7: Consumers

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. New Truck Registrations	3233.	3415.	3417.	4363.	3927.	4418.	4102.	4574.	3581.	4052.	5187.	3915.
2. New Car Registrations	3272.	3539.	3671.	3483.	3083.	3741.	3676.	3397.	3012.	3752.	4868.	3177.
3. Wyoming Personal Income[1] (M$)	5967.	5933.	6004.	6114.	6066.	6176.	6370.	6394.	6381.	6546.	6585.	INA
4. US Disposable Income (B$)	2261.	2303.	2367.	2429.	2502.	2554.	2606.	2724.	2739.	2818.	2800.	2847.
5. US Personal Income[1] (M$)	2651169.	2704449.	2755421.	2832277.	2921828.	2989330.	3057274.	3112603.	3159817.	3190683.	3211584.	INA
6. Latest US Consumer[2] Price Index (1967=100)	293.0	297.2	300.8	301.5	303.3	306.2	312.1	312.2	315.3	318.7	320.5	323.4
7. Quarter's Average US CPI	292.5	296.1	299.5	301.4	303.1	305.2	310.0	312.1	313.9	317.7	319.7	322.4
8. Liquor Sales (T$)	7102.	7868.	8455.	9863.	6622.	7478.	8180.	9554.	6360.	7538.	8931.	9526.

[1]Revised series. Business Week, the previous source for monthly personal income for Wyoming and the U.S., has discontinued its series. Personal income data will subsequently be collected from the Bureau of Economic Analysis, U.S. Department of Commerce. Readers should be cautioned that the two series are not comparable.

[2]Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 8: Employment and Labor[1]

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. Civilian Labor Force	250258.	267248.	276925.	256902.	246802.	258507.	261039.	249652.	241636.	258670.	256138.	244553.
2. Employment	225488.	242087.	253149.	239275.	226897.	240970.	247678.	236455.	223271.	241601.	240889.	226475.
3. Unemployment	24770.	25161.	23776.	17627.	19905.	17537.	13360.	13197.	18366.	17069.	15249.	18078.
4. Unemployment Rate	9.9	9.4	8.6	6.9	8.1	6.8	5.1	5.3	7.6	6.6	6.0	7.4
5. Initial Claims Filed	15650.	10951.	8657.	11117.	10502.	7271.	5255.	8237.	13595.	8047.	6991.	12467.
6. Applications Received	12970.	11787.	12144.	9359.	10290.	11541.	11375.	9685.	11106.	12017.	11424.	11347.
7. New Non-Agricultural Openings	4724.	6185.	7992.	5528.	4679.	9779.	12905.	8655.	7004.	11450.	12640.	9685.
8. New Non-Agricultural Placements	4106.	6608.	10529.	6446.	5946.	9111.	10348.	8331.	6308.	9597.	9656.	9163.
9. Miners' Average Weekly Hours	39.9	39.5	41.8	41.2	42.8	43.2	42.9	43.5	42.4	43.9	43.3	44.5
10. Miners' Average Weekly Pay ($)	490.14	490.96	521.24	519.71	547.39	558.70	552.01	572.47	573.82	591.61	574.69	600.17
11. Miners' Average Hourly Wage ($)	12.27	12.43	12.47	12.60	12.78	12.94	12.87	13.16	13.54	13.47	13.27	13.50

[1]The most recent year's data are preliminary.
Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published quarterly.

Table 9: Energy and Mineral Production

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. Wyoming Coal (TST)	25400.	24746.	29784.	27401.	32020.	28964.	31806.	34908.	35020.	31608.	32228.	30508.
2. U.S. Coal (TST)	190260.	180439.	204117.	198085.	227129.	223657.	246163.	188471.	220997.	220203.	225484.	211487.
3. Wyoming Oil (TBPD)	321.	311.	325.	318.	311.	325.	350.	338.	330.	327.	337.	334.
4. U.S. Oil (TBPD)	8679.	8658.	8680.	8700.	8737.	8831.	8879.	8942.	8849.	8857.	8901.	8895.
5. Wyoming Natural Gas (MCFD)	1172.	1269.	1050.	1373.	1588.	1376.	1285.	1417.	1601.	1274.	1275.	INA
6. U.S. Natural Gas (MCFD)	47683.	43073.	44703.	48924.	52912.	49076.	47968.	49888.	51347.	45264.	44992.	INA

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas data are published monthly, and coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.

Table 10: Government

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. Sales and Use Tax Collections (T$)	56909.	46453.	53361.	55424.	55954.	51151.	57132.	59570.	54966.	50917.	63025.	65957.
2. Violent Crime[1]	301.	274.	409.	241.	221.	318.	350.	334.	304.	275.	350.	319.
3. Nonviolent Crime[2]	4802.	4821.	5319.	4219.	3728.	4486.	4790.	4170.	4170.	4969.	5120.	4212.
4. Stolen Property (T$)	3176.	2918.	3005.	2892.	2065.	2627.	2856.	2487.	2244.	2437.	3443.	2447.
5. Stolen Property Recovery Rate	46.5	36.9	40.3	46.1	42.7	42.9	51.5	45.5	51.9	38.5	51.6	41.0
6. Percent of Crimes Cleared[3]	22.8	21.8	24.2	23.5	30.9	22.4	22.9	30.7	28.3	24.0	25.1	28.9

[1]Murder, negligent homicide, forcible rape, robbery, aggravated assault.
[2]Burglary, larceny, auto theft.
[3]Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.
Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 11: Tourism

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
Visitors, National Parks and Monuments												
1. Yellowstone	65368.	553986.	1653211.	133088.	63927.	536765.	1561475.	100802.	66776.	592059.	1500133.	103487.
2. Grand Teton	183675.	686326.	1462761.	238442.	136459.	522640.	1373523.	206891.	130583.	517614.	1299635.	181840.
3. Devil's Tower	8912.	87506.	160953.	16894.	9037.	72461.	131447.	15145.	8841.	68885.	135061.	12157.
4. Fossil Butte	626.	5134.	9120.	4206.	246.	4246.	9107.	1762.	115.	4254.	10434.	1213.
5. Fort Laramie	4887.	28311.	56592.	7665.	2352.	27529.	54704.	5527.	2625.	26185.	49165.	3921.
6. Big Horn NRA-South[1]	13428.	44977.	56419.	29358.	18715.	45104.	67403.	26388.	31533.	56612.	77495.	46073.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	84187.	122665.	167385.	97696.	85780.	125371.	169579.	101625.	88135.	131520.	166903.	98463.
8. Hotel, Motel, and Camp Sales Tax (T$)	912.	1048.	2017.	1397.	979.	1084.	2178.	1389.	932.	1070.	2136.	1370.
9. Gasoline Sales (TGL)	71330.	81160.	107116.	79911.	63980.	85891.	102748.	77108.	66798.	83529.	101676.	74304.

[1]Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation monthly report.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 12: Utilities[1]

Calendar Quarters	1/83	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85
1. Residential Electric Connections	179111.	179717.	178762.	178535.	179967.	179536.	178837.	179123.	179451.	181034.	179423.	179609.
2. Residential Electric Consumption (TKWH)	489892.	392223.	294755.	395182.	562483.	437086.	359496.	484523.	542962.	395900.	348469.	510291.
3. Commercial Electric Connections	30772.	31194.	30533.	31404.	32340.	32462.	32874.	32738.	33058.	33730.	33782.	33603.
4. Commercial Electric Consumption (TKWH)	351633.	327565.	353743.	342219.	485953.	437983.	455181.	468378.	504376.	474481.	497271.	512748.
5. Industrial Electric Connections	3647.	3667.	3655.	3624.	3119.	3150.	3122.	3059.	2957.	2926.	2933.	2872.
6. Industrial Electric Consumption (TKWH)	1471528.	1388817.	1397176.	1016334.	1456749.	1911229.	2049121.	2479998.	1572877.	1904448.	2159299.	2626516.
7. Other Connections[2]	2819.	3059.	3164.	2791.	2759.	3155.	3438.	3165.	2916.	3145.	3219.	3112.
8. Other Consumption (TKWH)	6780.	8710.	46427.	13306.	6129.	13775.	50031.	10385.	5321.	19238.	57385.	10970.
9. Residential Natural Gas Connections	76567.	76449.	74638.	75037.	76263.	75081.	74802.	75736.	76112.	75456.	74772.	75826.
10. Residential Natural Gas Consumption (MCF)	6531664.	8926691.	2871311.	8444801.	15230399.	8356402.	2804867.	9293855.	14912809.	6892581.	2723293.	9855048.
11. Commercial Natural Gas Connections[3]	6873.	6869.	6710.	6817.	6881.	6817.	6770.	6859.	6882.	6785.	6651.	6737.
12. Commercial Natural Gas Consumption (MCF)[3]	3667569.	5716746.	1792146.	4865053.	9496853.	5231096.	1656779.	5481602.	9319095.	4495896.	1640628.	5816481.
13. Industrial Natural Gas Connections	97.	97.	97.	98.	94.	95.	96.	93.	91.	92.	96.	93.
14. Industrial Natural Gas Consumption (MCF)	7626560.	10221456.	9291988.	13201149.	13193998.	25099377.	12505089.	26405131.	9633325.	12378588.	6370238.	9827421.
15. Other Natural Gas Connections[3]	48.	48.	46.	45.	45.	46.	46.	46.	46.	47.	42.	42.
16. Other Natural Gas Consumption (MCF)[3]	176.	322.	5323.	267.	235.	905.	5882.	336.	138.	1739.	8033.	176.

[1]Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2]"Other" includes agriculture, municipal, and other public.

[3]Figures for the first and second quarter of 1983 reflect a change in the authority connections/consumption made by the Northern Utilities. Prior to January 1983, the company listed public authority under the category of other natural gas connections/consumption. Northern Gas now combines public authority connections/consumption with their commercial natural gas connections/consumption.

NOTE: Due to divestiture, Mountain Bell is no longer able to provide IPR with the telephones in service figure; because Mountain Bell accounts for the bulk of telephone mainline service in Wyoming, IPR has decided to discontinue the telephone data series.

Sources: Series 1-18: Reports to IPR by selected electric, natural gas, and telephone utility companies. Survey conducted monthly.

Wyoming Comparative Cost of Living Index* (January 8-10, 1986): Statewide Average = 100

City	Rank	All Items	Food	Housing	Transportation	Medical
Gillette	1	110.03	100.63	125.19	101.34	107.06
Jackson	2	109.48	96.79	122.67	102.69	99.82
Evanston	3	108.59	98.43	123.86	103.74	98.49
Pinedale	4	106.73	102.34	115.66	101.25	101.52
Rock Springs	5	106.69	105.12	113.43	102.71	99.38
Sundance	6	102.21	103.55	107.62	95.39	102.52
Kemmerer	7	102.20	96.17	107.46	98.92	101.70
Casper	8	101.52	100.21	99.58	106.01	103.19
Sheridan	9	100.82	101.44	100.13	99.83	102.51
Cheyenne	10	100.65	97.02	103.85	99.22	99.83
Douglas	11	100.30	101.69	98.98	99.58	103.44
Worland	12	100.45	102.33	99.07	98.08	104.40
Wheatland	13	99.54	103.84	97.62	100.41	100.64
Laramie	14	98.81	99.24	98.08	99.73	96.94
Cody	15	98.03	100.24	95.42	99.96	99.30
Riverton	16	96.99	98.12	93.87	100.10	101.79
Thermopolis	17	95.62	100.92	91.16	98.35	94.64
Newcastle	18	95.41	99.56	88.56	98.54	102.29
Buffalo	19	94.50	98.69	85.10	98.92	98.75
Lusk	20	93.79	102.82	80.80	99.45	97.90
Rawlins	21	93.67	98.50	87.21	99.80	93.23
Greybull	22	92.73	98.20	82.69	98.57	97.55
Torrington	23	91.05	94.16	82.02	97.41	93.11

*Apparel and Recreation Indices not shown.

Source: Wyoming Department of Administration and Fiscal Control.

Average Rents by City, Fourth Quarter 1985*

City	Apartment	Trailer Lot	House	Mobile Home
Cheyenne	$322.92	$131.67	$434.33	$283.33
Buffalo	296.67	105.00	277.35	255.00
Casper	296.09	140.00	389.05	275.86
Cody	306.87	130.00	380.00	279.41
Douglas	281.21	125.00	395.24	213.64
Evanston	394.50	202.00	535.11	420.47
Gillette	371.76	177.50	499.02	335.00
Greybull	230.00	76.50	270.00	280.00
Jackson	368.89	105.00	473.71	276.11
Kemmerer	355.25	146.67	360.00	329.29
Laramie	334.74	117.00	382.77	258.75
Lusk	222.50	90.00	230.00	292.00
Newcastle	285.71	97.50	239.29	263.00
Pinedale	318.75	135.00	459.25	308.33
Rawlins	254.74	122.50	282.83	248.34
Riverton	274.18	113.75	315.49	270.83
Rock Springs	353.13	161.50	470.33	358.50
Sheridan	317.07	128.75	354.07	251.00
Sundance	241.36	80.00	307.85	278.58
Thermopolis	298.75	110.00	285.83	296.43
Torrington	281.47	60.00	259.50	239.17
Wheatland	253.33	100.00	321.43	277.62
Worland	307.69	120.00	355.88	260.71

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in WQU. In this edition, published series begin with the 1st quarter of 1983, and end with the 4th quarter of 1985. For other data series (primarily annual), the most recent observations, up to 12, are published in WQU. Most annual data series will reappear in WQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout WQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronymn "INA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from IPR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet

TKWH - Thousand Kilowatt Hours

$ - Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

T$ - Thousands of Dollars

H$ - Hundreds of Dollars

ST - Short Tons

TST - Thousands of Short Tons

MCFD - Million Cubic Feet Per Day

TBPD - Thousands of Barrels Per Day

GL - Gallons

TCF - Thousands of Cubic Feet

KWH - Kilowatt Hours

TGL - Thousands of Gallons

HBBL - Hundreds of Barrels

HMCF - Hundreds of MCF Per Day

HST - Hundreds of Short Tons

$/ST - Dollars Per Short Ton

RECENTLY PUBLISHED WYOMING RELATED RESEARCH REPORTS

AN ECONOMIC ANALYSIS OF AN ENHANCED OIL RECOVERY PROCESS by Scott E. Atkinson	$2.50*
ANALYSIS OF THE IMPACT OF SEVERAL MANAGEMENT ALTERNATIVES FOR YELLOWSTONE NATIONAL PARK'S FISHING BRIDGE by Scott E. Atkinson, et. al.	$5.00*
ANALYSIS OF THE LONG-TERM IMPACTS AND BENEFITS OF GRAND TETON NATIONAL PARK ON THE ECONOMY OF TETON COUNTY, WYOMING by John Merrifield and Shelby Gerking	$5.00*
ANALYZING PROPERTY TAX ASSESSMENTS IN WYOMING by Shelby Gerking, Gillian Arnott and Martha Schilling	$4.00*
CHANGING ENERGY PRICES AND ECONOMIC RENTS: THE CASE OF WESTERN COAL by John H. Mutti and William E. Morgan	No Charge
COUNTY PROFILE HANDBOOK Edited by S.T. Mast	$5.00*
EXPORTATION OF STATE AND LOCAL TAXES: A COMPARATIVE ANALYSIS by Shelby Gerking, William Morgan and John Mutti	$5.00*
FALLING WORLD OIL PRICES AND THE ROLE OF RAILROADS IN THE MARKET FOR WYOMING COAL by Scott E. Atkinson and Joe Kerkvliet	$5.00*
POTENTIAL FOR COMMERCIAL AIR TRAVEL BY WYOMING STATE EMPLOYEES by Shelby Gerking and Amy Weber	$10.00*
SHIFTING, INCIDENCE, AND INTER-STATE EXPORTATION OF PRODUCTION TAXES ON ENERGY RESOURCES by William E. Morgan and John H. Mutti	No Charge
TAX RATES, REVENUES, COAL SALES, AND THE STATE'S WELFARE: WYOMING VS. MONTANA by Scott E. Atkinson	No Charge
THE ECONOMIC IMPACT OF LARAMIE COMMUNITY COLLEGE ON THE ECONOMY OF LARAMIE, COUNTY, WYOMING by Scott E. Atkinson and Joe Kerkvliet	No Charge
THE EXPORTATION OF STATE AND LOCAL TAXES IN A MULTILATERAL FRAMEWORK: THE CASE OF HOUSEHOLD TYPE TAXES by John H. Mutti and William E. Morgan	No Charge
THE STAGGERS ACT AND COMPETITION IN RAIL TRANSPORT OF WYOMING COAL by Scott E. Atkinson and Joe Kerkvliet	$5.00*
THE WYOMING ECONOMY: HISTORICAL TRENDS AND PROJECTIONS by Shelby Gerking and John Merrifield	No Charge
TRANSPORTATION CHARGES, PRODUCTION TAXES, AND SCRUBBER LEGISLATION: CONSEQUENCES FOR THE WYOMING COAL MARKETS by Scott Atkinson, Joe Kerkvliet, and Paulette Barclay	$2.00*
WYOMING'S NEAR-TERM ECONOMIC OUTLOOK: MODEST GROWTH FOR THE 1980'S by Shelby Gerking, S.T. Mast, Scott Atkinson	$2.00*

*Prices reflect reproduction costs only. In state subject to 3% sales tax.

HOW TO ORDER

Please mail your order together with payment (if necessary) to:

INSTITUTE FOR POLICY RESEARCH
Box 3925, University Station
Laramie, WY 82071
ATTN: Administrative Secretary

Thank You

CRIS

Census Retrieval Information Service

P.O. Box 3925
Laramie, WY 82071
(307) 766-5141

Room 302
Emerson Building
Cheyenne, WY 82002
(307) 777-7504

U.S. Census information for Wyoming is handled by the Census Retrieval and Information Service (CRIS). CRIS issues printed reports of Wyoming Census data as well as handling specific requests. Much of the population and housing data from the 1980 Census is now available.

CRIS reports now available:		PRICE
#82-8:	Age Distribution in Wyoming,1980, August 1982, 120 pages. Analysis of age profiles in 5-year brackets. Wyoming: Comparison with USA and with 1970. Indications of net in-migration by age. Prediction of 1990 peak at ages 30-34. Counties: Maps of age distribution. Graphs of age profiles for each county. Cities: Age profile for each city.	No Charge
#5:	STF1, October 1981, 54 pages. 100% count data, 1980 population and housing: state, counties and cities.	No Charge
#6:	Laramie People Patterns, January 1982, 11 pages. Minority distribution in Laramie by zoning and by age of neighborhood.	No Charge
#83-5	May 1983, 29 pages. Labor in Wyoming, 1980, labor force participation; age of labor force occupations.	No Charge
#84-1	October 1984, 25 pages. Age and Type of Wyoming Housing, 1980, characteristics of single, multiple, and mobile housing units: age, renter-occupancy, vacancy, county growth effects.	No Charge
#84-2	December 1984, 21 pages. Poverty in Wyoming, 1980 Census, numbers and rates of groups of persons in Wyoming with 1979 income under poverty level.	No Charge

CRIS is a cooperative service provided by the Institute for Policy Research, University of Wyoming, and the Research and Statistics Division, Wyoming Department of Administration and Fiscal Control.

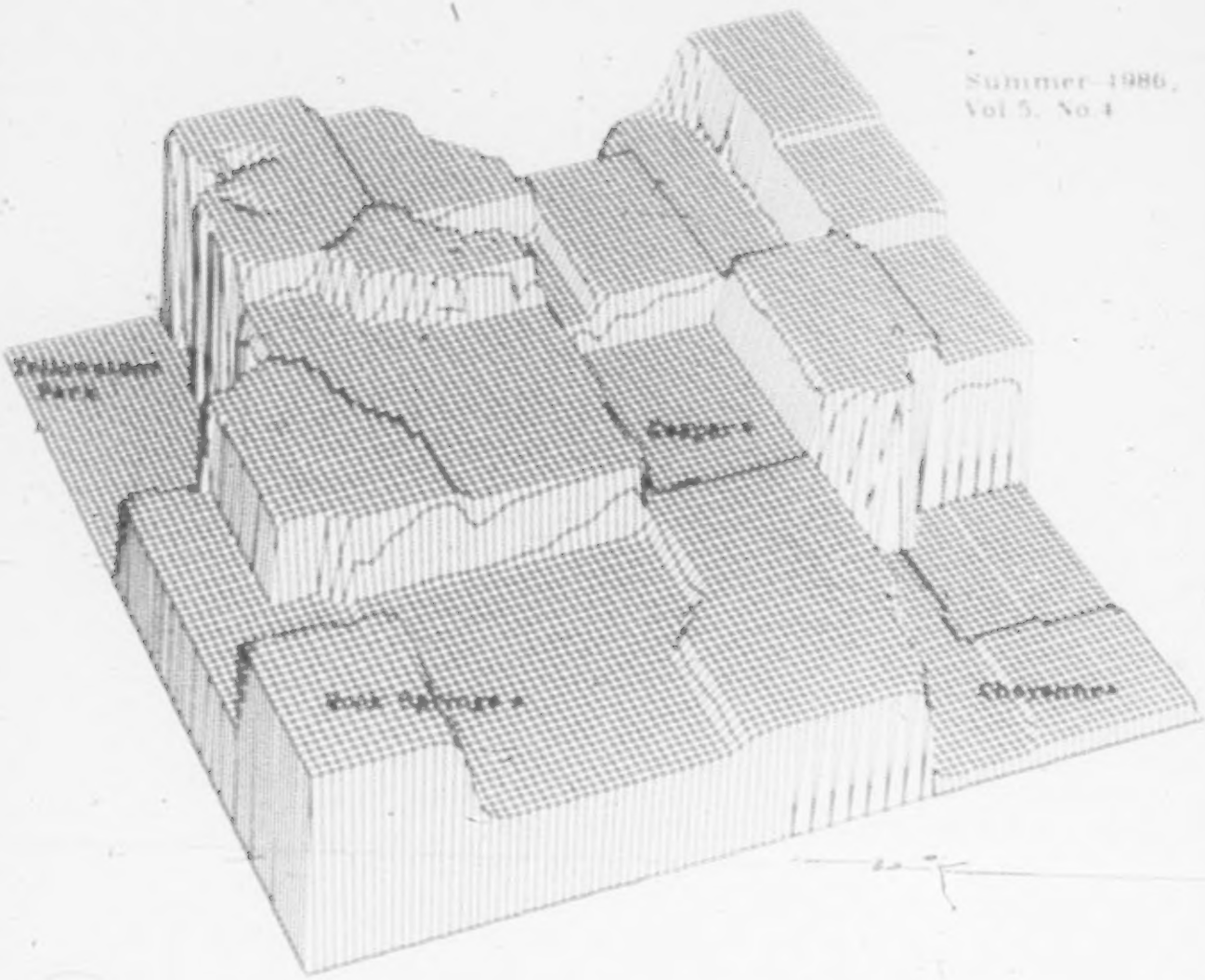
We are looking forward to assisting you in the future.

Judy Denison and G. Fred Doll
Institute for Policy Research
University of Wyoming

Phil Kiner
Research and Statistics Division
Department of Administration and
Fiscal Control

WYOMING QUARTERLY UPDATE

Summer 1986
Vol 5, No 4



IPR

Oil and Gas as a Percentage of Total Assessment by County, 1985

Wyoming Quarterly Update

Wyoming Quarterly Update (WQU) represents the efforts of the Institute for Policy Research (IPR) at the University of Wyoming to provide improved data access services. The data presented in WQU are assembled from secondary sources, such as government agencies and private industry. The staff of IPR greatly appreciates the ongoing, cheerful cooperation of each of the data sources listed in the bibliography.

WQU provides current indicators and timely, easily accessible data. Most of the data published in WQU are updated quarterly with the most current numbers. The complete data sets from which WQU originates are maintained, together with documentation by IPR. Readers are encouraged to contact IPR to find out how to gain access to data which do not appear in the WQU. Many data series, such as gasoline sales and taxation data, span more than 30 years. Numerous other series cover 20 years or more.

Efforts to expand the subject and geographic detail (county data) of data sets will be made continuously. Featured in this edition is a perspective of travel and oil activity in the state.

The cover of each edition features a contour map illustrating the geographic distribution of a particular variable. This edition presents a contour map depicting oil and gas as a percentage of total assessment by county, 1985.

First-time readers of WQU should refer to the "format" explanations on page 48 for keys on how best to use and interpret data presented in this publication.

For additional information, contact WQU editor S.T. Mast at:

The Institute for Policy Research
University Station, Box 3925
Laramie, WY 82071
(307) 766-5141

OTHER IPR SERVICES AND RESEARCH REPORTS ARE LISTED AT THE END OF THIS WQU.

INSTITUTE FOR POLICY RESEARCH
OFFICE OF RESEARCH AND GRADUATE STUDIES
UNIVERSITY OF WYOMING

FRONT MATTER
Introduction....i
Table of Contents....ii

WYOMING SCENE
Overview and Perspective....2
Minerals Outlook....4
Agricultural Outlook....13
Job Openings Outlook....14
Coincident Indicators Index....15

INDUSTRY PROFILE
Oil Patch....18
Tourism Potential....25
Revenue Scenario....27
Labor Force....30
Buffalo Ranching....32

ECONOMIC CHANGES
Discussion....34

WYOMING DATA
Agriculture....36
Banking and Finance....37
Business Conditions....38
Construction....39
Consumers....40
Employment and Labor....41
Energy and Mineral Production....42
Government....43
Tourism....44
Utilities....45
Rent by City....46
Wyoming Cost of Living Index....47
Format Description....48
CRIS Information....49
Publications List....50

Editor....S.T. Mast
Editorial Advisors....G. Fred Doll
Scott E. Atkinson
Word Processing....Tracy Moore
Editorial Assistance....Claoma Woodall
Business Coordinator....Patsy Parrott
Research Aide....Ruth Tebbutt
Graphics....Cathy Ryan
UW Graphic Arts Services
Computer Graphics Package

Wyoming Quarterly Update is published four times per year in fall, winter, spring, and summer editions.

The articles appearing in this publication represent the opinions of the authors and do not necessarily reflect the views of the state of Wyoming or the University of Wyoming or their respective executive officers. Duplication or quotation of material in this publication is welcomed, but it is requested that WQU, the Institute of Policy Research, University of Wyoming, be credited.

WYOMING SCENE

Overview and Perspective

The national economy through the first half of the year seemed to be stuck in low gear. And the longer it went, the slower it became, prompting some economists to wonder about the prospects for another recession brewing on the horizon.

The strength in the economy since the end of the last recession has been in consumer spending. The industrial sector has remained sluggish, due in large part to stiff competition from imports.

The U.S. Commerce Department announced in July that the gross national product, the broadest measure of economic activity, expanded at an annual rate of just 1.1 percent from April through June, less than one-third the growth rate posted during the first quarter. The Reagan Administration had hoped for 4-percent growth in the gross national product this year in order to help reduce the massive federal deficit and drive the national unemployment rate below 7 percent. Such prospects now, however, appear dim.

In order to help stimulate the sluggish economy, the Federal Reserve Board announced in July that the discount rate would be lowered from 6.5 percent to 6 percent. The change resulted in the lowest rate in almost nine years. The discount rate is the fee central banks charge for loans to financial institutions. Federal Reserve Board officials said the reduction was in line with interest rates charged in other areas and was being made at a time of relatively low inflation.

From all indications, the economy needed the help. U.S. industrial production dropped 0.5 percent in June, the fourth decline in five months, and retail sales increased only slightly. Essentially, there has been no growth in the factory sector during the past two years; growth has largely been a result of consumer spending. Some economists warned that unless the country's trade imbalance shrinks, any improvement in the economy during the second half of the year is unlikely.

The government's June report of labor markets was not particularly hopeful. The number of workers on nonfarm payrolls fell by 89,000 in June to an annual rate of 99.8 million • seasonally adjusted. Manufacturing jobs continued to decline, even taking into account strikes in various industries. Adjusted for strikes, the sector still lost nearly 120,000 since last January.

Softness in consumer spending became more evident during the second quarter. While disposable income was rising, retail sales did not keep pace. Retail sales levels for May and June were stuck in place--$118.5 billion in May and $118.7 billion in June. Part of the flatness could be attributed to big drops in the price of gasoline. By the end of June, sales at service stations were off 19 percent since the end of 1985.

There were, however, pockets of strength in consumer spending during the second quarter. Spending for consumer hardgoods rose 3.5 percent in May, with autos selling at an annual rate of 8.2 million. Nonauto hardgoods rose even more, rising at 4.1 percent--the biggest monthly gain in more than eight years. The rise in spending for nonauto hardgoods was led by home appliance sales. In addition, income after taxes was still rising faster than inflation. For the third consecutive quarter, aftertax income during the second quarter seemed to be rising faster than consumer spending--meaning consumers could pay off debts or save money.

Wholesale prices held steady in June, but

fell at an annual rate of 6.5 percent over the first half of 1985, according to the Labor Department. It was the largest six-month drop since the government began tracking wholesale prices in 1947. The drop was largely the result of declining oil prices. While the drop was good news for many consumers and producers, it wrecked havoc in oil-producing states such as Texas, Louisiana, and Wyoming.

The situation with respect to world oil prices remained unsettled through July. The Saudi Arabians, OPEC's largest producer, indicated a desire to establish a production ceiling in order to stabilize prices. Talks between OPEC delegates and non-OPEC nations such as Norway and Mexico also were initiated. A major sticking point was the share of the production pie that should be allotted to each producer, and once allocated, whether such quotas would be honored. Oil prices hovered around the $11-per-barrel mark for West Texas Intermediate grade, the principal American grade, with some analysts predicting that the price could drop even further.

As prices dropped, American oil firms and related companies began widespread reductions in employment. The American Petroleum Institute (API) said the decline in oil prices could be responsible for wiping out 142,000 industry jobs this year, with nearly as many jobs lost among supplier firms. With a price of $15 per barrel, API said nearly 300,000 jobs could be lost by 1991, not including jobs lost among supplier firms. Under the $15-price scenario, imports of oil would rise from about one-third of U.S. consumption at present to more than 50 percent. API estimated that 11,000 direct industry jobs are lost for each reduction of $1 billion in exploration and production expenditures. At the same expenditure-reduction levels, 8,900 jobs are lost among supplier firms. The fear among many analysts is that such reductions will cripple the domestic industry for many years to come. If low prices prevail over too long a period, the industry will be incapable of responding quickly when the price situation improves.

In Wyoming, the economy slowed further as a result of dropping oil prices and continued difficulties in agriculture. In addition, Pacific Power & Light announced that generation at the Dave Johnston and Wyodak power plants would be cut, resulting in the permanent layoff of 100 miners at the Glenrock Coal Company. PP&L cited slack electricity demand in making the cutback.

Elsewhere, the First National Bank of Sheridan was found insolvent and closed by the Comptroller of the Currency on July 17. The bank was subsequently purchased and assumed by the First Wyoming Bank Corporation. It was the 12th bank to close in Wyoming since June of 1983, the highest number of closures since the 1930s.

Labor force statistics released by the Employment Security Commission (ESC) in June were not encouraging. For the month, the unemployment rate for the state stood at 9.5 percent, tied with Texas for the sixth highest unemployment rate in the nation. At the same time, the size of the labor force was down 3 percent from June 1985 and the number of employed workers was down by 13,500. Ten Wyoming counties registered unemployment rates in excess of 10 percent, according to ESC data.

S.T. Mast, IIR

# #

Summer Minerals Outlook

OVERVIEW

Figures recently released by the Wyoming Department of Revenue show that the assessed value of Wyoming's mineral production decreased about $400 million from 1984 to 1985. Despite the decline, assessed mineral value in 1985 was still a healthy $5.5 billion. More importantly, however, the 1985 valuation precedes the precipitous fall in oil prices of early 1986. Because the value of most of Wyoming's other minerals are also projected to decline in 1986, it is inevitable that the 1986 valuation will be below that of 1985. At this point, it is difficult to predict how much lower it will be, but it will be a substantial decrease.

Second quarter updates provide little optimism that valuations, revenues, production, and employment in the mineral industries will recover in the next quarter or for that matter in 1986. One bright spot is the trona industry, which seems to have gained some additional export markets and may boost 1986 production at least back up to pre-1985 levels. Natural gas and coal production may also increase in 1986, although both could fail to register projected gains based on low, preliminary, first quarter production figures. Oil production, as well as oil prices, will be down in 1986, and marginal wells continue to be shut-in or even abandoned. Drilling activity has not been so low since the 1940s.

The only action taken so far this year in regard to the dilemma of the oil industry has been the federal and state governments' decisions not to terminate leases that are temporarily shut-in due to poor economics brought on by low oil prices. Oil prices are expected to average only $13.55 per barrel in 1986. Prices could increase if OPEC reaches some accord on setting production quotas or if the federal government establishes an import quota. Unfortunately, there is little optimism that either of these possibilities will occur in 1986.

Natural gas faces a similar situation as oil. The price is falling, wells are being shut-in, and markets are not being found. New drilling for natural gas has all but ground to a halt. The bright spot is the production of carbon dioxide from southwestern Wyoming. This production should begin in late 1986 and grow to about 100 billion cubic feet per year by 1987 or 1988. For comparison, methane production from Wyoming was 597 billion cubic feet in 1985.

The coal industry is for the most part healthy and stable. The exceptions are the Hanna and Sheridan districts where mines have closed or contracts have not been renewed.

Table 1: Wyoming Mineral Production Forecast to 1991[1].

Calendar	Oil Production[2]	Natural Gas Production[3]	Carbon Dioxide Production[3]	Coal Production[4]	Trona Production[4]	Uranium Production[4]
*1981	122.1	455.4	--	102.8	11.8	4.6
*1982	118.7	465.1	--	107.9	10.1	2.1
*1983	120.9	539.7	--	112.2	10.5	3.0
*1984	127.8	600.1	--	130.7	11.0[5]	1.6[5]
*1985	131.0	597.9	--	140.4	9.4[5]	0.5[5]
1986	125.0	600.0	25.0	142.0	11.3	0.3
1987	123.0	630.0	75.0	144.0	11.4	0.3
1988	120.0	660.0	100.0	146.0	11.5	0.3
1989	118.0	700.0	100.0	148.0	11.5	0.3
1990	116.0	750.0	100.0	149.0	11.7	0.3
1991	114.0	800.0	100.0	150.0	11.9	0.3

*Actual values for comparison, [1] Geological Survey of Wyoming, June, 1986 [2] in millions of barrels, [3] in billions of cubic feet, [4] in millions of tons, [5] estimated.

Statewide, the spot market for coal has tapered off with some spot contracts supplanting previous long-term contracts (Glass, 1986). Because of this, spot sales are not in addition to long-term contracts but are in essence only making up the differences between high contract demand and trimmed contractual takes. The average price for Wyoming coal will decline further in 1986 as contract prices are renegotiated downward through reopener clauses. A bright note is that railroad competition has lowered transportation costs in many instances, thereby helping make Wyoming coal competitive in a cutthroat market fueled by overcapacity. In at least one instance, however, a major electric power company, supplied by Wyoming, has converted one of its coal-fired units to include many power plants that have this option of switching fuels.

The bottom line is that state revenues are substantially down. Local governments have been forced to trim budgets, have cut back on employees, or have reduced services. Even the state had to reduce its FY 1987 budget in anticipation of revenue shortfalls. In the last six months, hundreds of people working in the mineral industry, directly supporting the mineral industry as well as many who provided needed goods and services to these people, are now among the unemployed.

In addition, the diminished level of oil and gas drilling signals more trouble is ahead. Exploration and drilling is at such a low level that depleted reserves will not be offset by new discoveries. Oil production will continue to decline as older fields are depleted. Even if prices rise, an upturn in activity will be slow in coming. By the mid-1990s, however, growth in energy demand should bring some new coal-fired power plants on line, and Wyoming's large coal mines will be there to compete for these new markets. The natural gas bubble may disappear a little faster than expected because of conversions of power plants and industrial users to natural gas, and shut-in gas wells could reopen to supply some of that demand. In short, there is some optimism for gains in production of natural gas and coal at least in the long-term. The prognosis for gains in oil and bentonite production remains clouded and more pessimistic.

Although much of what is reported in this second quarter update is depressing, the state is still a major producer of many mineral resources, and its mineral industry is for the most part capable of rebounding quickly in a better economic climate. Mineral revenues, though declining, are a far cry above their levels in the early 1970s. Belt tightening will help companies weather the bad times, but the long-term threat to the domestic oil and gas industry is real and needs immediate, serious attention.

Although belt tightening is needed, one must question the wisdom of the almost complete decimation of technical and support staffs by many major petroleum companies. Aside from the personal trauma to the laid-off employees, these significant cuts in trained manpower are of no small significance in the event of a turnaround because companies will be faced with inadequate staff and personnel to quickly boost exploration and drilling. The domino effect on ancillary businesses, whose clientele have disappeared, only compounds the impact to Wyoming's economy.

Gary B. Glass, State Geologist
Geological Survey of Wyoming

OIL AND GAS UPDATE

Once again crude oil prices, which began declining late last year, are a major concern for Wyoming as well as other major oil-producing states. Spot prices for crude dropped below $10 a barrel in early April, rose to above $17 in mid-May and declined again to their current $9-$11 range. The posted price for Wyoming crudes presently averages around $10 a barrel.

In Wyoming, the rig count for the first two weeks in June averaged 26, compared to the average of 93 for all of 1985. Well completions in Wyoming for the first five months of 1986 are running about 22 percent below last year (Petroleum Information, Rocky Mountain Region Report, 6-4-86). Nationwide, the rig count dropped below 700 to an all-time low since Hughes Tool Company began keeping records in 1940. In contrast, there were over 4,500 rigs working in the United States late in 1981 when crude oil was selling for over $40 a barrel. It is obvious that at the current drilling pace, this country cannot find enough new oil and gas reserves to replace what we produce. Without significant discoveries of new reserves, U.S. production will continue to drop, and we will become increasingly dependent on foreign imports. During the 1980-1985 period when crude oil prices were relatively high, over 300 new oil and gas fields were discovered in Wyoming. These discoveries, along with significant new discoveries in the 1970s, followed the increase in prices caused by the Arab oil embargo of 1973 and boosted Wyoming's oil production in 1983, 1984, and 1985, reversing its previous decline. Natural gas production also increased during this period and would have increased even more if markets had been available. According to figures from the Wyoming Oil and Gas Conservation Commission, there were 1,685 producing gas wells and 1,271 shut-in gas wells as of September 1985. There was an average of 1,853 producing gas wells and an average of 1,123 shut-in gas wells per month through the first nine months of 1985.

In another setback for Wyoming's oil and gas industry, Chevron officials recently announced the closing of their Casper offices. The closing will affect 150 people in land, exploration, and production offices and should be completed later this year.

In a related development, Marathon Oil has announced more layoffs, but company officials have not said how many of Wyoming's 700 Marathon employees will be affected. This will be the second Marathon layoff this year.

Low crude prices have forced Amoco Production Company to close over two-thirds of Fourbear Field near Meeteetse. A 14°API crude was selling for only $5 a barrel. Amoco has shut-in over 60 wells in the Bighorn Basin until prices increase.

The director of the Wyoming Revenue

Department's Ad Valorem Tax Division believes the severance tax for hydrogen sulfide and carbon dioxide may be settled by the Wyoming Supreme Court. Amoco and Chevron maintain that hydrogen sulfide should be taxed at a 2-percent rate rather than a 6-percent rate since it is not a hydrocarbon. Amoco is also challenging the department's position that carbon dioxide production should also be taxed at a 6-percent rate.

On a more optimistic note, final 1985 production figures from the Wyoming Oil and Gas Conservation Commission show that the state produced nearly 131 million barrels of oil and 997.9 billion cubic feet of natural gas. Production for 1984 was 127.8 million barrels of oil and 600.1 billion cubic feet of gas.

Since the last issue of the Quarterly Update, the U.S. Bureau of Land Management held two lease sales. The April sale drew high bids of $1,795,890 for 29,938 acres. There were bids on 116 of the 189 parcels offered, with an average bid of $59.99 per acre. Bass Enterprises' high bid of $1,881.88 per acre was for a 40-acre lease in the Powder River Basin about one mile east of Dakota oil and gas production in Ross Field.

The June sale drew high bids of $1,332,216 for 24,512 acres. There were bids on 75 of the 86 parcels offered. Coastal Oil and Gas with two partners made the high bid of $437.50 per acre for a 480-acre tract in the Powder River Basin about one mile from Dakota oil and gas production in Ogalalla Hills Field. The average bid was $54.35 per acre.

The Wyoming Board of Land Commissioners' March lease sale drew $77,402 in high bids on 112 of 199 parcels offered. There were bids on 44,504 acres with an average bid of $17.38 per acre. Nora Pickrel of Moorcroft made the high bid of $370 per acre for a 480-acre lease in the Powder River Basin. The lease is within a half mile of Minnelusa oil production at Rabbit Ears Field.

The May state sale drew high bids of $354,941. Only 70 of the 200 parcels received bids. Bids were for 27,543 acres, and the average bid was $12.89 per acre. The top bid of the sale was $140 per acre for a 640-acre tract near Minnelusa oil production in Adon East Field in the Powder River Basin. Maurice Brown of Casper made the high bid. (For a comparison with past sales, see the table on page 13 of "Wyoming Geo-notes No. 11").

During the first half of 1986, the Powder River Basin continued to be the most active area in terms of wildcat and development drilling. Most of the acreage for lease in that basin has drawn bids during the six sales this year and the per-acre bids are usually higher there than for leases in other parts of the state.

One of the best discoveries in the Powder River Basin was the Bass Enterprises' 12-13 Moore Ranch well in northwestern Converse County. The well tested 3.9 million cubic feet of gas and 1,055 barrels of oil per day from the Dakota.

One area outside the Powder River Basin that has seen significant recent activity is the southern end of the Moxa Arch. Sun Exploration and Production recently tested two offset wells to last year's Luckey Ditch discovery well. The 2-A Luckey Ditch-Federal flowed 1,020 barrels of oil and 2.5 million cubic feet of gas per day from the Dakota. The 3-A Luckey Ditch-Federal flowed 907 barrels of oil and 2 million cubic feet of gas per day, also from the Dakota. These two wells establish production to the southeast and southwest of the discovery well, completed last year, and which is currently producing 10 million cubic feet of gas and 1,400 barrels of condensate per day from the Dakota ("Petroleum Information, Rocky Mountain Region Report", 4-22-86). Anadarko Petroleum recently tested their 1-A Whiskey Springs-Federal well, two miles northeast of the Luckey Ditch discovery well, at 10.3 million cubic feet of gas and 1,185 barrels of condensate per day from the Dakota. All these wells are in southeastern Uinta County in T.12N., R.114W.

Chevron's 31-33C Cabin Creek well, about 25 miles southeast of Jackson, tested 720,000 cubic feet of gas and 48 barrels of condensate per day from the Madison Limestone. This Overthrust Belt discovery is nearly 100 miles north of the nearest comparable Madison production in the Whitney Canyon-Carter Creek Field.

Work on field facilities at Amoco's enhanced oil recovery project for Wertz Field near Bairoil has started. Construction of the carbon dioxide processing plant was scheduled to begin June 8 and injection of carbon dioxide into the Madison Formation should begin this fall.

In a related item, Richard Ewing, director of the University of Wyoming's Enhanced Oil Recovery Institute, told oil industry members that an additional 400 million to 500 million barrels could be produced in Wyoming by using enhanced oil recovery techniques. This estimate is only about one-third of what was estimated recoverable at last year's symposium, but it still represents about four years of annual oil production for Wyoming. The second annual symposium was held in Casper, May 15-16 with representation from the University of Wyoming, the oil industry, and government.

The U.S. Bureau of Land Management (BLM) is allowing operators of uneconomical wells to suspend production without losing their federal leases. Companies can apply for a one-year production suspension. The state has also done the same.

In another BLM action, the agency wants to revoke an oil and gas lease issued to Exxon. BLM officials claim the issuance of the lease violates an agreement with the Forest Service. The lease is along the Buffalo Fork River between Togwotee Pass and the Moran Junction entrance to Grand Teton National Park. Exxon has appealed the action and has asked for extensions on other leases in the area.

The Industrial Siting Council has approved changes in permits held by Exxon for work on its LaBarge Project. The council approved changes which decrease its jurisdiction over the impact of drilling activity and which emphasize the role of the Wyoming Department of Environmental Quality in monitoring emissions from Exxon's gas processing facilities.

At the April hearing of the Wyoming Oil and Gas Conservation Commission, two rules

which had been proposed, were withdrawn. The withdrawn rules pertained to the deletion of rectangular spacing patterns and proposed production curtailment schedules for exception wells. In the June hearings, the commission raised its mill levy to 0.2 mil (from 0.1 mil) because of declining revenues related to low oil prices.

Rod DeBruin, Petroleum Geologist
Geological Survey of Wyoming

URANIUM AND INDUSTRIAL MINERALS UPDATE

Uranium

Uranium activity in Wyoming remained at low levels during the second quarter of 1986 compared to late-1970s activity. One mine and mill continued to process uranium in Wyoming: COGEMA - Pathfinder Mines' Shirley Basin operations. COGEMA - Pathfinder Mines also continued to upgrade its Gas Hills mill.

Four other uranium companies are planning development/mining operations on their properties. An application for an In Situ Uranium Permit for recovery testing was received by the Wyoming Department of Environmental Quality (DEQ) from ACIP Mining for the Juniper Ridge area, Poison Basin District, west of Baggs.

Malapai Resources is reportedly considering developmental work in the Powder River Basin. A revision to their uranium permit was processed by DEQ. Malapai and Westinghouse, owner of the Irigary Ranch In Situ Project, negotiated an agreement to conduct testing. Malapai's project is adjacent to the Irigary Ranch site. Reportedly, Malapai will conduct a small-scale, in situ, leach-uranium removal program with a temporary or portable recovery plant.

Everest Exploration continues in situ work at the Highland site in Converse County.

London Central Power Exchange is holding the Leuenberger Ranch in situ property in Converse County as an investment for possible future production.

Other companies continued assessment drilling and mine and mill maintenance work in Wyoming. ACIP, American Nuclear, Cherokee Exploration, Everest Minerals, Malapai Resources, and Minerals Exploration conducted some drilling this quarter. Reclamation work proceeded at Bear Creek Uranium's Bear Creek Mine in Converse County, Exxon's Highland Operation in Converse County, Petrotomics' (Texaco) mine at Shirley Basin in Carbon County, and Uranium Resources' mine in the southern Powder River Basin in Converse County.

The dismantling and selling of equipment from the Silver King - Tennessee Valley Authority uranium projects continued. Equipment from their Morton Ranch project was sold by auction on April 2.

Reclamation projects were also news. COGEMA - Pathfinder protested a DEQ rule regarding delays in reclamation work requirements. The DEQ agreed to drop the proposed rule, saying it did not help the uranium industry.

The uranium-tailings pile located south of Riverton was also in the news as the Wyoming congressional delegation asked the U.S. Secretary of Energy to move the pile to the American Nuclear site in the Gas Hills. The federal department has recommended in-place stabilization. Wyoming's DEQ and the congressional delegation have favored removal of the tailings.

The prospects for uranium mining in Wyoming remain about the same as they have for the past several years. No further reductions are expected in Wyoming production as a result of the unshielded reactor meltdown at Chernobyl in the Soviet Union and its release of massive amounts of radiation. Wyoming's current production is exported to France, where nuclear power is an established majority source of electricity and seems to be popularly accepted--at least much more so than in West Germany and parts of eastern Europe.

In the United States, a milestone was reached this quarter as the 100th nuclear power plant unit became operational. There now are 102 operating nuclear power plants in the country. Ventures such as those by ACIP, Everest, and Malapai may represent opportunities to provide fuel for these plants from domestic sources. Under present market conditions, however, most fuel needed by U.S. reactors will be imported from Canada and Australia.

In June, the U.S. Department of Energy proposed selling the uranium-processing plants it now operates at a loss. These plants isotopically enrich the uranium-235 content of natural uranium ore from 0.7 percent to about 3 percent required for nuclear-plant fuel and supply Defense Department contracts for weapons-grade material (90 percent enrichment). Since much enriched uranium fuel is now imported, or is planned to be imported, these plants, which are also of an older technology, are costly and inefficient. It remains to be seen whether private industry would be interested in their purchase. The plants being considered for sale are in Portsmouth, Ohio, and Paducah, Kentucky.

Trona

There are a number of optimistic signs for Wyoming's trona industry, which has been experiencing stagnant growth over the past several years. Trona, Wyoming's largest source of mineral revenue after hydrocarbons (oil, gas and coal), is used in the manufacture of glass, detergents, sodium chemicals, and other industrial products. The consumption of products that use soda ash (refined trona) has remained relatively steady, particularly since the prime user of soda ash, the bottle glass industry, was significantly cut back due to increased use of plastic bottles. Although the remaining users have not increased consumption enough to offset the loss of the glass industry, increased exports have offset lower domestic sales of soda ash. In fact, exports have been the reason for a great deal of the optimism. In April, South Korea ordered 30,000 tons of soda ash through a consortium of the six domestic producers of soda ash, five in Wyoming (Allied Chemical, FMC, Stauffer, TG [formerly Texasgulf] and Tenneco) and the California producer, Kerr-McGee.

Negotiators also continued to work with Japanese importers to increase the purchases of domestic soda ash by Japan. This purchase would help offset the balance of trade losses to Japan. However, Japanese tariffs and subsidized synthetic soda ash producers are obstacles to the projected sale.

Soda ash sales were up about 10 percent in the second quarter over the second quarter of 1985. This represents an increase in domestic soda ash demand, as well as an increase in exports. Soda ash prices are expected to increase slightly.

Phosphate

The first load of phosphate slurry was received by the Chevron Phosphate plant southeast of Rock Springs from its mine north of Vernal, Utah, through its new slurry pipeline. The plant, under construction since 1982, was scheduled for completion this summer according to company officials. The first production of phosphate fertilizer from this plant was also expected this summer. The plant uses Utah phosphate and Wyoming sulfur to make the fertilizer.

Lower crop prices and an oversupply of agricultural products continue to reduce demand for phosphate for fertilizer. Although phosphate is not mined in Wyoming, the operation of the plant in Rock Springs will favorably affect Wyoming's economy, in contrast to plant and mine closing elsewhere in the United States. For example, two plants in Idaho, owned by Baker Industries and J.R. Simplot Company, were scheduled to shut down when Chevron's new plant starts.

Sulfur

Interest in Wyoming's sulfur, as well as interest in sulfur in the rest of the U.S., increased dramatically during the second quarter of 1986 due in part to the publication of an article in the Wall Street Journal (April 14, 1986) stating that Canadian sources of sulfur will be depleted by 1989. Since the publication of that article, a scramble to tie up domestic sulfur sources has started. In Wyoming, sulfur is produced by eight gas-sweetening plants and refineries. Probably most of this production, some of which has been stock piled, will be marketable at prices 10 percent to 20 percent higher than the present rate of $142.00/ton (F.O.B. Gulf Coast). Also, natural sulfur deposits in Wyoming continue to attract interest. There is apparently no activity occurring at the sulfur deposit near Thermopolis, recently acquired by the Continental Sulfur Company (see "Wyoming Geonotes No. 10", page 28). The Geological Survey of Wyoming has received inquiries regarding the sulfur deposits near Cody and in Star Valley, but no property has reportedly been acquired. The Geological Survey also published "Open File Report 86-15" to aid potential sulfur consumers locate sources of refined and natural sulfur.

Gypsum

Nationally, gypsum producers produced more in 1985 than ever before and should continue to increase production again in 1986. This may not necessarily be true for Wyoming, however. The cement plant in Laramie, consumer of nearly 14,000 tons of gypsum per year, or about 4 percent of the state's production, is closed for plant modernization (see "Cement"). Regionally, construction activities are down; therefore, less gypsum is required for wallboard relative to national increases in demand. Gypsum production by Celotex and Georgia - Pacific in the Bighorn Basin, however, should remain constant or drop slightly below 1986 levels. This decrease in construction in the region (particularly Billings and Great Falls, Montana, and Casper) is related in part to the depressed condition of the oil and gas industry.

Bentonite

Preliminary figures show that Wyoming's bentonite industry, suffering from declining oil and gas drilling since 1982, took another hit this year. With falling oil prices, the rig count is significantly down. Wyoming bentonite is used primarily in well-drilling fluid and is exported to all areas of the U.S. As drilling footage decreases, the demand for bentonite decreases. It is likely that bentonite production may drop 20 percent or so in 1986 from 1985 levels. So far, no producer has announced closings.

Cement

The production of cement in Wyoming ceased in 1986 as the Laramie cement plant, formerly operated by Monolith Portland Cement, was purchased by Centex Cement Enterprises in December of 1985. The plant is closed for modernization. The operator, now Mountain Cement, Inc., continues to improve the plant and develop new sources of limestone and gypsum for future plant operation. The company is currently exploring for gypsum resources to augment or replace that from the Red Mountain Quarry, owned by Mountain Cement. An alternative haul route from the Red Mountain Quarry is also being proposed, saving almost 50 percent of the haul distance. Plans to modernize the plant continue, and production is expected to resume in the future.

Construction Aggregate

The production of construction aggregate for non-federal, highway construction projects should increase in 1986 as the upgrading of access roads to Peacekeeper missile silos has begun. Several contracts for construction materials have been let, and new quarries have been opened in Goshen, Laramie, and Platte counties. Elsewhere, the production of construction aggregate should remain about the

same as 1985. Major projects such as the Shute Creek, Carter Creek, and Whitney Canyon gas plants and the Chevron fertilizer plant are nearing completion, so the demand for construction aggregate in Lincoln, Sweetwater, and Uinta counties should decrease.

Other Industrial Minerals

The production of other industrial minerals in Wyoming (clay, decorative and ornamental stone, ballast, shale, and sodium sulfate) should not change much from 1985 to 1986. Burlington Northern, Inc., through its minerals and oil subsidiary, Meridian Minerals, is applying for a mining permit to produce ballast from a quarry in quartzite north of Guernsey. If developed, this production would take some production away from Burlington Northern's current suppliers of ballast, which includes the Guernsey Stone Company in Wyoming.

The production of sugar rock (limestone used in sugar refining) has ceased (see "Geo-notes No. 9", p. 21), but Holly Sugar in Torrington is reportedly looking for a source of limestone to replace rock hauled from South Dakota. Holly Sugar's Lost Day Quarry north of Fort Laramie still ships stockpiled limestone to the Laramie River power plant at Wheatland for stack-scrubbing and dust-control purposes.

It is unlikely that any zeolite operations will begin in Wyoming this year. Large zeolite (natural ion-exchanger minerals used in water softeners, industrial refining, and odor control) deposits are present in Wyoming southeast of Riverton and south of Bitter Creek.

A "pumice" mining operation near Superior in Sweetwater County has been proposed. This proposal, however, has run into a number of objections based on the presence of archaeological values and ice caves. The rock proposed for mining is a leucite-bearing volcanic rock suitable for dimension and decorative stone, as well as for lightweight aggregate used in such things as [illegible] block.

Ray E. Harris, Uranium and Industrial Minerals Geologist
Geological Survey of Wyoming

COAL UPDATE

Coal deliveries from Wyoming mines in the first quarter of 1986 indicate that coal production is slightly behind 1985's record year. Although there is not enough data available at present to make a reliable production estimate for 1986, it is almost certain that our March 1986 production forecast of 148.0 million tons for 1986 was too high. Several factors may be contributing to less coal production so far this year, but the most probable cause is the availability of lower-priced fuel alternatives (oil and gas) to utilities that are capable of fuel switching. Another strategy utilities are using to take advantage of low natural gas and fuel oil prices is to shut down part of their coal-fired capacity (e.g. a single generating unit) and displace it with gas- or oil-fired generation on site, if possible, or purchased from other sources. Hopefully, this will be a short-lived phenomena that will end when oil and gas ceases to have a price advantage over coal.

Future production losses for Wyoming coal producers could also occur in states that pass legislation requiring utilities to use local coal at least in a limited capacity. For example, Oklahoma has passed a law that requires coal-fired utilities in that state to burn at least 10 percent Oklahoma coal. The law, which goes into effect on January 1, 1987, is expected to boost Oklahoma's coal industry by creating an additional 2,000 jobs and increase annual revenues from mining and industry-related companies by $35 million to $50 million. Almost 13 million tons of Wyoming coal were shipped to Oklahoma utilities last year, and it was the third largest consumer of Wyoming coal that year. Oklahoma utilities are experimenting with ways to mix their 13,000 Btu/pound coal with the Wyoming coal that averages about 8,600 Btu/pound. The law requires that the coal mix be calculated on a Btu basis; the requirement is nullified if the Oklahoma coal costs over 5 percent more than the Wyoming coal on a Btu basis (this prevents the law from causing excessive electric rate increases).

On a more positive note, several coal-consuming states have enacted their own legislation that requires electric utilities to reduce sulfur dioxide emissions for acid rain abatement. These states appear to be emphasizing the use of low sulfur western and Appalachian coal rather than installation of stack scrubbers. Electric utility companies in Wisconsin are planning other alternatives for reducing sulfur dioxide emissions: Wisconsin Electric Power Company has announced that four units of its Pleasant Prairie generating plant will be retrofitted with atmospheric fluidized bed combusters (FBC) which will enable them to use high sulfur coal; Wisconsin Power and Light is participating in a project to upgrade low sulfur western coal through the use of the Koppelman process, which produces K-Fuel (see p. 8 and 10 of "Wyoming Geo-notes No. 8", September 1985). The proposed K-Fuel plant is located near Gillette. The K-Fuel, which has a heating value of 12,000-13,000 Btu/pound, negligible moisture, and low sulfur, would then be blended with high-sulfur Illinois Basin coal and burned in Wisconsin Power and Light's cyclone boilers. In addition to individual states acting to decrease sulfur-dioxide emissions, utility companies are also moving to decrease sulfur-dioxide emissions at their own electric plants in an effort to protect themselves from acid rain legislation that now seems inevitable.

Statistics on the distribution and utilization of Wyoming's 1985 coal production (McNair, 1986) indicate that Wyoming coal was used in 25 states. Five states each consumed over 10 million tons of Wyoming coal; as in 1983 and 1984, Texas continued as the largest consumer of Wyoming coal in 1985, with 30 million tons (up 4.4 million tons from 1984). Wyoming was the second largest consumer with 22.5 million tons (an increase of 3.4 million tons), followed by Oklahoma (12.9 million tons) and Kansas (12.1 million tons). These four states consumed over half of Wyoming's coal produced in 1985; 80 percent of the state's

coal was consumed by only seven different states. Electric utility companies located in 17 different states used nearly 98 percent of the state's total production in 1985 to fuel steam-electric generating plants. The eight remaining states that consumed Wyoming coal used the coal primarily in industrial boilers and secondarily for residential/commercial heating. About 1.8 million tons of the 3.0 million tons in "other industrial" and "residential/commercial" categories went to Wyoming users. Most of this coal was used by other mineral-related industries in the state, including the trona, bentonite, and cement industries. Additional coal was used at FMC Corporation's formcoke plant in Lincoln County (which converts non-coking subbituminous coal to formcoke through the company's patented process) and by sugar beet processing plants. Although 84 percent of Wyoming's coal was shipped to out-of-state consumers, a small amount of coal (132,000 tons) was shipped into Wyoming from coal producers in Colorado, Utah, Montana, and Pennsylvania.

As in 1984, 93 percent of the state's coal was shipped by rail in 1985. Coal shipments on the Burlington Northern Railroad (BN) in 1985 were down about 9.5 million tons since last year; accordingly, the percentage of the state's coal production shipped by BN dropped from 85 percent in 1984 to 76 percent in 1985. The Chicago and North Western/Union Pacific (C&NW/UP) joint venture railroad, which is currently competing with BN for coal transportation contracts out of the Powder River Basin, increased its coal shipments 12.2 million tons last year (a three-fold increase over 1984) and now accounts for about 15 percent of the total coal tonnage shipped. The Union Pacific Railroad Company (UP), serving mines in southern and western Wyoming, recorded a slight decrease in coal shipments in 1985.

The second quarter of 1986 began with a significant development in rail transportation in the Powder River Basin. C&NW announced that plans for a 10-mile long extension of its rail line northward into part of the Powder River Basin served solely by BN had been scrapped. The plans were abandoned when C&NW reached an agreement with BN to share the existing track into the area. Funding for the agreement, which will cost C&NW about $27 million, was obtained from a financing package between C&NW and UP when they were planning their joint venture into the Powder River Basin several years ago. It is expected that the new agreement will create additional competition between BN and C&NW for coal transportation from the three additional coal mines now served. A fourth mine, Cordero Mining Company's Cordero Mine, completed a 1.5-mile rail spur to the jointly-owned C&NW/UP and BN tracks last summer and will also be able to take advantage of the competition.

In other transportation news, the C&NW/UP joint venture recently secured two additional coal transportation contracts and BN secured an additional contract. C&NW/UP signed a long-term contract with Louisiana Gasification Technology, Inc. to deliver 300,000 to 600,000 tons of coal per year from an unspecified (and yet to be contracted) mine in the southern Powder River Basin to the company's coal gasification plant at Plaquemine, Louisiana. Shipments are due to begin in early 1987. A one-year coal transportation contract was also signed between C&NW/UP and the Lower Colorado River Authority (LCRA)/City of Austin, Texas. This contract calls for delivery of between 3 million and 4.5 million tons of coal to the Fayette (Seymour) Power Project's units 1 and 2. The winning bid rate of $21.11/ton was $0.64/ton lower than the bid submitted by BN and $0.72/ton lower than the winning bid (also submitted by C&NW/UP) for coal haulage last year. The bids were higher than the utility anticipated (a ceiling price of $19.31/ton was set when asking for bids). The utility attributed this higher rate to the lack of competition for the Missouri-Kansas-Texas Railroad (MKT) at the end of the haul. BN won a seven-year, 1-million-tons-per-year transportation contract with the Platte River Power Authority in Fort Collins, Colorado. The coal will be shipped for $7.13/ton from Nerco's new Antelope Mine in northern Converse County. The 250-MW Rawhide Energy Station is 250 miles south of the mine. The previous rate for this coal haulage was $8.63/ton; the utility expects to save $1.5 million each year on freight rates.

In the last issue of the Quarterly Update, it was reported that Decker Coal Company, operator of two Montana coal mines north of Sheridan, would lay off 60 miners (not 50 as reported) in May of this year. Only 19 miners were actually forced off the job when the time came; other work force reduction were attained by voluntary layoffs, and the work force was effectively trimmed by only 40 workers. Decker cited the cancellation of the long-term contract with LCRA as part of the reason for the layoffs. Because of this cancellation, the company's parent firm, Kiewit Mine and Engineering Company, has filed a $1-billion lawsuit against LCRA.

Employment in Wyoming mines continued to fluctuate in the second quarter of 1986. In April, Arch Mineral Corporation announced the rehiring of 20 miners that had been laid off in late November and December, 1985. Arch was rehiring to support operation of a third dragline that was placed in service at its Seminoe No. 2 Mine near Hanna. In early April of this year, the state's only major underground coal mine, Carbon County Coal Company's (CCCC) Carbon County No. 1, laid off 200 to 220 people (out of a work force of 268). This layoff cuts the mine employment in the Hanna Basin by over one-third. The coal company had failed to reach an out-of-court settlement with the mine's only customer, Northern Indiana Public Service Company (NIPSCO), and had not sold any coal from the mine since early 1986. An appeal of the federal court's decision in a contract dispute between CCCC and NIPSCO (which resulted in cancellation of CCCC's contract and a damage award of $181 million) was heard on June 6, 1986. CCCC is retaining some workers at the mine in the event that the Court of Appeals requires specific performance of the contract and the mine reopens.

In the Powder River Basin, Kerr-McGee Coal Corporation laid off nine employees at its Jacobs Ranch and Clovis Point mines in early

March, 1986. The nine people were part of a nationwide layoff of 325 employees by Kerr-McGee that was attributed (by the company) to be a direct result of the drastic drop in oil prices and worsening economic conditions experienced by the company. The two mines combined to produce about 14.4 million tons of coal in 1985; the Jacobs Ranch Mine was the second largest mine in the state with almost 13 million tons produced.

In July, Glenrock Coal Company laid off 100 of its employees at the Dave Johnston Mine in Converse County when Pacific Power and Light announced it would cut the generating capacity of both its Dave Johnston and Wyodak power plants. Production of power from the Dave Johnston plant will be scaled down to 400 megawatts from its previous output of 750 megawatts. The Wyodak plant will be reduced from 334 megawatts to 180 megawatts, but in this case, no employees will be laid off from the Wyodak Mine, which supplies fuel for the plant.

The employment cutbacks at Wyodak and Dave Johnston also translate into about 1.7 million tons of deferred coal production from the Powder River Basin. Some of this production, however, may be offset by increased tonnage requirements at the Jim Bridger Mine in Sweetwater County. Pacific Power and Light intends to boost generating output at the Jim Bridger power plant and its Centralia, Washington, plant if demand increases.

One new coal supply contract with Wyoming mines has been announced since the last coal update in March 1986, and some activity, resulting in price reductions for selective utility companies, has occurred.

Idaho Power has signed a 1.8-million-tons-per-year contract with Black Butte Coal Company in Sweetwater County. The coal will be used for the Valmy No. 1 and No. 2 units at Valmy, Nevada. This 21-year contract was signed in June and calls for a flexible annual tonnage between 0.8 million and 1.2 million tons.

Iowa Public Service (IPS) recently completed contract renegotiations under a price reopener clause in its 1.8-million-tons-per-year contract with Carter Mining Company's Rawhide Mine. Before renegotiation, IPS was paying $23.29 a ton delivered in February 1986; with freight rates of $14.18 a ton subtracted, FOB mine price for the coal was $9.11 per ton. The new contract calls for an FOB mine price of $6.84 per ton, a decrease of $2.27 per ton (McGraw-Hill, 1986a). The utility is also evaluating bids for 0.9 million to 1.4 million tons of coal delivered to the same plant, the George Neal Unit No. 4, for the last half of 1986.

Iowa Public Service has also completed contract renegotiations with Arch Mineral's Seminoe No. 2 Mine, which reduced the FOB mine price on that coal by $3.88 per ton. This coal is shipped to the Neal No. 1 and No. 2 units at Sioux City, Iowa.

Nebraska Public Power District (NPPD) recently renegotiated a 2.0-million-tons-per-year coal supply contract with Atlantic Richfield Company's Black Thunder Mine that resulted in price reductions expected to save the utility $83 million to $88 million in the next decade (McGraw Hill, 1986b).

A Colorado utility company, Platte River Power Authority (PRPA), is currently negotiating with Nerco Coal's Antelope Mine to bring about a reduction in price on the 0.8-million-tons-per-year coal delivery contract to the utility's Rawhide plant near Fort Collins, Colorado. PRPA is citing an "economic hardship" provision in the contract as a reason for seeking price cuts. The current delivery contract with Nerco was signed in 1978, but delays in completing Nerco's Antelope Mine forced PRPA to sign a substitute contract in the interim with Thunder Basin Coal Company's Black Thunder Mine. PRPA paid a delivered price of $16.28 per ton (91.9 cents/million Btu's) from Black Thunder in December 1985; in January 1986, the delivered price from Antelope was $20.80 per ton (117.6 cents/million Btu's). As mentioned above, the utility recently secured a transportation rate reduction with BN.

Richard W. Jones, Coal Geologist
Geological Survey of Wyoming

METALS AND PRECIOUS MINERALS UPDATE

In the second quarter, exploration for precious metals and massive sulfides was

reported in the state. The exploration localities of some companies, however, were not disclosed. Some reported activities included: (1) the filing for a permit by a company to test gold mineralization in the McGraw Flats area 20 miles south of Lander; (2) the start-up of the field season for the Geological Survey of Wyoming's South Pass COGEOMAP mapping program; (3) a request by Henrietta Mines and Kirkwood Oil and Gas to the State Board of Land Commissioners to reduce royalties on a low-grade gold and copper deposit 20 miles west of Cheyenne; and (4) a proposal by Fremont Iron and Steel Company to construct a steel mill at Douglas, Wyoming. It was also recently announced that the University of Wyoming will receive the Anaconda Minerals collection of reports and maps.

A Littleton, Colorado, company filed for a permit with the Wyoming Department of Environmental Quality to test gold mineralization at McGraw Flats south of Lander, Wyoming. McGraw Flats lies east of the Miners Delight gold mine, and east of the South Pass Archean greenstone belt.

Gold at McGraw Flats was initially mined in the late 1800s, and a network of ditches was constructed to supply water to the dry placers. By 1905, much of the gold was being mined by hydraulic methods. Mining sporadically continued into the 1930s. The gold is localized in Oligocene age conglomerate of the Twin Creek alluvial fan, and the amount of gold produced from these deposits is unknown (Antweiler and others, 1980).

Along the western flank of the South Pass greenstone belt, the Geological Survey of Wyoming began mapping activities for the 1986 field season in the Anderson Ridge and Parting-of-the-Ways quadrangles. The COGEOMAP project (jointly funded project of the Geological Survey of Wyoming and the U.S. Geological Survey) is designed to map the entire South Pass greenstone belt and to catalogue mineral occurrences and resources in the belt. A preliminary report on this area was published by Hausel (1986).

One intriguing gold assay produced from a grab sample collected along the Anderson Ridge fault in 1985 prompted a reexamination of that area. This sample contained low, but anomalous gold (2.3 ppm) and was collected from a relatively wide part of the Anderson Ridge fault in sec. 21, T.29N., R.101W. West of this sample locality (sec. 25, T.29N., R.102W.), a boulder conglomerate originates from the Anderson Ridge fault and continues to the southwest. Initial panned concentrates from the conglomerate have so far produced no detectable gold.

Recently, Henrietta Mines of Canada, and Kirkwood Oil and Gas of Casper, Wyoming, met with the State Board of Land Commissioners in an attempt to have the board reduce royalties for the Copper King property west of Cheyenne. The Copper King Mine is located on state-owned land in the Silver Crown District of the Laramie Range. The Copper King deposit is a Proterozoic-age, large tonnage, low-grade, gold-copper occurrence. Based on incomplete drilling, the Copper King property reportedly contains the following resources:

Tons	Au(oz)	Cu(%)	Stripping Ratio (waste to ore)
2.8 million	0.044	0.36	0.5
6.0 million	0.038	0.32	1.2
13.5 million	0.028	0.26	1.8
35.0 million	0.022	0.21	2.0

The Board of Land Commissioners is seeking additional information on the leases held by the companies.

Fremont Iron and Steel Company is optimistic that it will receive funding to construct a mini-steel mill at Douglas, Wyoming. The mill could employ as many as 260 people and would be designed to process scrap metal into usable steel products.

The Anaconda Collection, weighing more than 40 tons, represents the product of more than 100 years of mining history of properties from around the world. Approximately one ton of reports and maps are on Wyoming properties alone. It was recently announced by Anaconda officials that the collection will be housed at the University of Wyoming Western Heritage Center, yet to be constructed.

W. Dan Hausel, Deputy Director
Geological Survey of Wyoming

# #

Summer Agricultural Outlook

The outlook for the agricultural sector of Wyoming's economy for the remainder of 1986 mirrors the past several years. Burdensome supplies and declining exports continue to be depressing factors for both feed and food grains. Cattle and calf numbers continue their persistent decline since 1975 without reflecting higher prices that the reduced supply would seem to indicate. Agricultural land values have continued to decline, negatively impacting net-worth statements and borrowing ability.

Grain Situation

Exports of both food and feed grains have continued to decline into 1986. Record 1985 corn yields, when combined with reduced exports and declining domestic feed use, will result in nearly a 3.9-billion-bushel carry-over as we begin to harvest the 1986 crop. Total U.S. feed grain production is expected to fall about 15 percent in the coming crop year. Nevertheless, ending stocks will probably rise to nearly four times what they were at the end of 1983/84. As a result, farm prices for corn are forecast to average close to the loan rate of $1.92, although harvest-time prices could be lower.

For wheat outlook, the 1986/87 supply and demand prospects suggest farm prices near the loan rate. Although reduced acreage and less-than-favorable weather have cut winter wheat prospects, adding lower new-crop supplies to the record carry-over boosts 1986/87 wheat supplies to a record 4.3 billion bushels. Heavy use of loans by program participants may result in tight free-market supplies for short periods of time for some wheat classes. Nevertheless, the average farm price is forecast to be $2.25 to $2.50 a bushel, compared with $3.16 in 1985-1986.

Livestock

Cattle numbers will continue to decline in 1986 both across the U.S. and in the state of Wyoming. Although the mid-year cattle inventory had not been released at the time of this writing, it is expected to reflect a 4 percent decline in total numbers from the 1985 report. The continuing, persistent decline in cattle numbers in recent years does not build as much optimism into the feeder cattle outlook as history would seem to dictate. The cattle numbers situation, reflecting a 20 percent decline from 1975 levels, should point to very strong cattle prices when compared to the early and late 1970s. Reduced supply of cattle coupled with favorable input factors would seem to indicate a dramatic rebound in prices for all classes of cattle. Unfortunately, changes on the demand side of the equation dampen the outlook for returned profitability for cattle producers in 1986.

Wyoming, with few exceptions, has enjoyed normal spring and summer moisture conditions. With reduced livestock numbers, the mid-summer outlook indicates ample grazing and winter forage supplies for the upcoming fall and winter.

Input prices for most production items have continued to improve relative to the past five years. Interest rates, although still high in real terms, have moderated somewhat when compared to the early 1980s. Feed grain prices are much lower, with continued prospects for inexpensive feed prices through 1987. Land prices should be nearing the bottom, after suffering sharp annual declines since 1982. Although lenders are still cautious about advancing credit or extending operating loans, continued decline in net worth due to declining land values will be less of a concern. Well-thought-out production and marketing plans, coupled with realistic budgets, should receive favorable treatment this fall.

Given the dynamic internal and external factors that have impacted agriculture in recent years, keeping abreast of changing market factors is extremely important. Producers must quickly evaluate changes and adjust their production and marketing plans as new information becomes available.

Robert D. Carver,
University of Wyoming

# #

Job Openings Outlook

Aircraft Mechanics

Aircraft mechanics, also known as airframe and powerplant technicians, service, repair, and overhaul aircraft and aircraft engines to ensure safety and dependability. The airframe mechanic is responsible for inspection, maintenance, and repair of the fuselage, wings, landing gear, flight controls, and electrical system. The powerplant mechanic inspects, repairs, and maintains jet-powered and piston-powered engines and propellers. Both must be familiar with the use of hand tools, welding equipment, riveting equipment, metal working tools and machinery, and air and electric drills.

The Federal Aviation Administration (FAA) certifies all aircraft mechanics. An individual may be certified as either an airframe mechanic or powerplant mechanic, or both. Requirements for certification include: 1) graduation from an FAA approved school, or at least 18 months of practical experience under the supervision of a certified mechanic for either the airframe or powerplant mechanic, or 30 months for the combined airframe/powerplant rating; and 2) pass written, oral, and practical tests. Individuals who seek certification as an authorized inspector must hold a current mechanic certificate (airframe and powerplant rating) for at least three years, have a fixed base of operation with the necessary equipment, facilities, and inspection data for proper inspection, and pass a written test.

The outlook for aviation mechanics depends on the amount of aviation activity, government regulations, and the availability of training opportunities. Currently, there is a slight surplus of certified mechanics in Wyoming. Most work on general aviation aircraft used for air taxi, commercial operations, pilot training, and private purposes. Turnover is low and most openings arise as workers leave the occupation or retire. Those wanting to work for major airlines must be willing to relocate. Nationally, the supply of professional maintenance technicians is severely limited. New civilian and government contracts to build new model aircraft have spurred a need for qualified, licensed mechanics. In addition to aviation growth, it is estimated that the FAA has scheduled over 75,000 veteran mechanics, who received their training during World War II, to retire in the next four years. It is anticipated that a large surplus of openings will be created due to these retirements.

Entry wage for a certified mechanic in Wyoming ranges from $6.00 - $8.00/hour. Maximum wage for an experienced certified mechanic is about $12.00 - $15.00/hour. Certified inspectors earn between $9.50 - $13.00/hour. Nationally, wages are higher, with average entry wages ranging from $9.00 - $11.00/hour, maximum wages between $12.00 - $18.00/hour, and inspector wages around $15.00 - $22.00/hour. It usually takes about five to 10 years to reach the maximum pay level. Advancement with the airlines is usually faster and the pay considerably higher.

Juanita M. Ackerman

Computer Maintenance Technicians

Computer maintenance technicians maintain and repair computers and computer-related equipment. The largest amount of the technician's work is on equipment such as terminals and card readers rather than on the computer itself. Technicians may perform routine maintenance as well as trouble-shoot problems and repair or replace faulty mechanical or electronic components. Major employers include companies that sell computer maintenance services, organizations with large computer installations and the Armed Forces.

Most employers prefer one to two years of post-high-school or military training in computer technology, basic electronics, or electrical engineering. Training in electronics, electricity, and related fields is offered at two-year and four-year colleges and universities in the state. Computer maintenance technician programs are offered at technical schools out of state. Some employers offer training programs which usually last from three to six months. To become fully qualified, computer maintenance technicians must usually spend six months to two years in on-the-job training. Rapid technological changes make it necessary for technicians to attend training sessions to update their skills.

The outlook for computer maintenance technicians depends on computer/computer equipment sales and technological advances. The demand for technicians may increase at a somewhat slower rate than computer sales because technological advances in the new equipment require less maintenance and repair. In Wyoming, increased purchases of computers by businesses will affect the number of openings for computer maintenance technicians. Opportunities are best for those with experience working on a number of components such as terminals, printers, and card readers.

Entry level wages usually range from $865 - $1,280/month. Maximum wages range from $2,500 - $3,300/month, depending upon skill level and employer.

Marian J. Dlugolecki

For more information, contact Juanita M. Ackerman or Marian J. Dlugolecki, Wyoming Career Information System, Box 3808, University Station, Laramie, Wyoming 82071 or phone (307) 766-6189.

# #

Wyoming Coincident Indicators Index

The Wyoming economy didn't exactly start 1986 with a bang, according to the Wyoming Coincident Indicators Index (WCII). The WCII is derived using economic variables whose movements coincide with movements in the overall economy. It is computed by the Division of Research and Statistics, Department of Administration and Fiscal Control.

The WCII is a composite index which uses four economic variables: 1) Wyoming total sales and use tax collections in 1972 dollars; 2) Wyoming state total insured wages paid in 1972 dollars; 3) Wyoming state total employment; and 4) an industry index comprised of one economic variable from each of Wyoming's three major industries. The three industries are agriculture, mining, and tourism, and the respective variables are: 1) prices received by Wyoming farmers and ranchers for all commodities; 2) Wyoming drilling rig count; and 3) Wyoming motor fuel gallonage sales.

Presented on the accompanying graph are the plots for three time series: one for the index using data which has not been seasonally adjusted, and one for the U.S. Coincident Indicator Index. The unadjusted index is presented to show the seasonality of the Wyoming economy. The U.S. index is shown in order that it might be compared to the Wyoming index. The more important Wyoming index, and the one with which all further analysis and description will be concerned, is the seasonally adjusted index. In this index, turns up and down are caused by factors other than seasonality. The base month is January 1972, which has an index value of 100. An index value doesn't have any meaning in and of itself but is valid only when compared to another value from the same index.

The only bright spot in the Wyoming economy during first quarter 1986 was total wages. First quarter 1986 wages were the highest reported first quarter wages in several years, but this was due mainly to several large construction projects which are now mostly completed. The outlook for wages and salaries for the remainder of 1986 doesn't look nearly as bright.

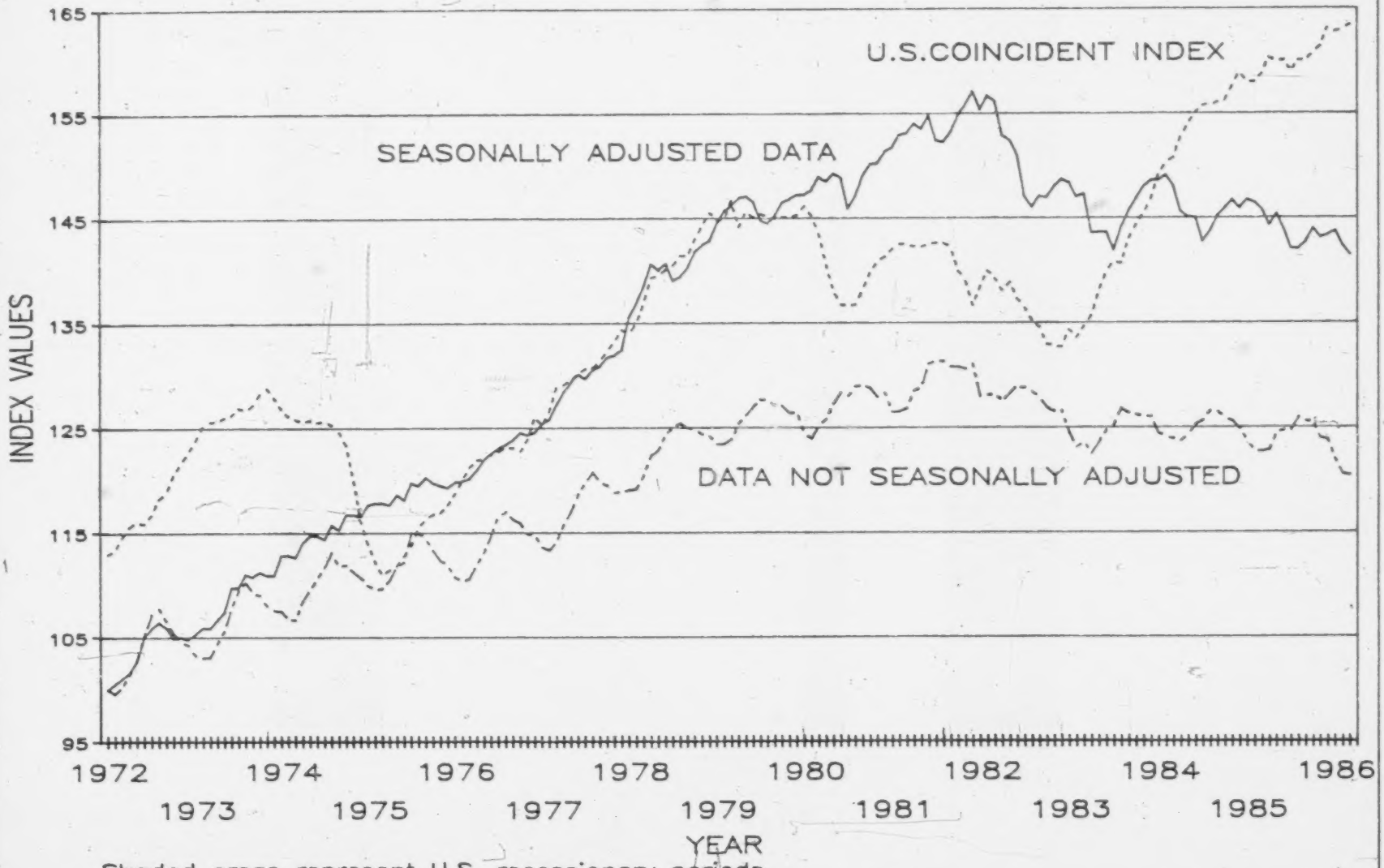
Sales tax collections, employment, gasoline sales, rig count, and agricultural prices were generally down from last year's levels. The seasonally adjusted index decreased 1.4 percent from December 1985 to March 1986, a significant decrease. The same index decreased only 2.3 percent during all of 1985.

The rest of the year doesn't look too promising for the Wyoming economy as a whole. Lower oil prices have reduced exploration and thus the employment and payrolls directly and indirectly associated with oil and gas development. The rig count is the lowest it has been in years and no rebound in oil prices is being forecast for the near future. However, lower oil prices also mean lower gasoline prices, and coupled with fewer Americans traveling overseas, this could lead to a good year for Wyoming tourism. While tourist spending is seasonal, a good tourist year would greatly help many small Wyoming businesses and the Wyoming economy in general. Other than seasonal increases in construction and agricultural employment, no substantial gains are expected for the remainder of 1986.

Steve Sommers, DAFC

# #

WYOMING COINCIDENT INDICATORS INDEX
JANUARY 1972 THROUGH MARCH 1986
JUNE 17, 1986



Shaded areas represent U.S. recessionary periods.

INDUSTRY PROFILE

In the oil patch, it's been...

A Long, Dry Summer

Robert Gould was waiting by the telephone for a call he didn't much want. His insurance agent would be calling, to tell Gould how much the premium would be on his oil field truck. Steep, he presumed. But there hadn't been much work for a heavy-duty oil truck since late March, when the price of oil dived, and no good prospects on the horizon. His house, in Gillette's Antelope Valley subdivision, was up for sale. Gould couldn't keep up the the mortgage payments. Although there were no more payments on the truck, Gould had considered selling it, too: "But the price on them is just give away," he said.

At Gould's backdoor, one of the few active rigs in the Powder River Basin was making hole. In the evening, it was easy to imagine the rig's long shadow running right up the side of the house. It was irony with an extra dash of bitter: Watching things slip away for want of work in the oil patch, while someone's making hole virtually in the backyard. "Pretty tough," Gould allowed.

It has been a long, dry summer in the oil patch. In June, the monthly average rig count in Wyoming stood at just 23. If drilling activity continues at the June pace for the rest of year, the level of activity will be at its lowest ebb since the 1940s. The problem was price, which flittered around the $11.00 per barrel mark, compared to $23.00 during 1985. Price, in turn, effected prospects for future production, as new exploration nearly ground to a halt.

The value of state oil production is immense. Royalty payments, severance taxes, and property taxes support a wide array of public projects. In 1985 (based on 1984 production), the state's taxable oil output was valued at $3.1 billion, or 52 percent of the state's total minerals valuation and 37 percent of the state's total assessed valuation. Twenty-two of Wyoming's 23 counties have at least some oil production. Since the valuation of oil is based on production and price, the steep drop in oil prices since last spring has severely affected future revenue prospects in the state. Coupled to this has been the loss of high-paying, oil-related jobs, the secondary effects of which ripple throughout the economy.

Among topics of conversation, oil prices top the list in many parts of the state. People wonder when the price will come back, or if it will come back, the rest of the decade. In Gillette, one group has taken to praying for better times. Others look upon "diversification" as the grail of the 1980s.

The Cowboy State is a long way from the Persian Gulf. But Wyoming oilmen and Saudi sheiks may as well be relations, so closely are their fortunes linked. When oil prices exploded in the 1970s, prompted by the Arab Oil Embargo of 1973 and a fearsome-looking OPEC cartel, the state bloomed and boomed. Rotary rigs made hole throughout the region and coal production increased at a furious rate. Even uranium looked good. About anything that would increase the supply of oil, or provide an alternative to oil, was worth considering with the price of crude at $30 a barrel.

In recent years, however, OPEC had begun to falter, its market share eroded by non-OPEC producers, gas-stingy automobiles, and conversions to fuels other than oil. OPEC members bickered over production and pricing strategies, or simply abandoned a unified approach to go their own way. The world was already awash in crude oil when the cartel notched up production to levels beyond 17 million barrels per day. The price slipped, then fell flat; and the sound of prices falling reverberated throughout Wyoming.

Converse County was a beneficiary of the energy boom of the 1970s. The economy moved rapidly from agriculture to energy; the county produced oil, gas, coal, and uranium. A coal gasification plant was in the talking stages.

But the energy picture changed. The demand for energy, once thought to be nearly insatiable, turned soft. "The resource area has basically gone down to nothing, compared to what it was in 1979-1980," said Mike Sierz, planning director for Converse County. Between the census of 1980 and the second quarter of 1986, Sierz estimated that the population of Converse County had declined from 14,069 to 11,256. The Glenrock area has been particularly troublesome. Sierz said the city backed a local subdivision with $250,000 worth of improvements. As market realities changed, and as energy prospects dimmed, no one showed up to purchase the lots. The project went into foreclosure. It was auctioned off for just $16,000, said Sierz, improvements and all.

Despite the changing fortunes of energy, the Converse County oil industry remained relatively strong through 1985. Indeed, taxable production actually increased, from about 8 million barrels in 1984 to about 8.8 million barrels in 1985. At the same time, however, the valuation of production dropped 4.8 percent, a herbinger of more drastic things to come.

Even agriculture has been affected by dropping oil prices. Cecil Coe, senior vice president of the Converse County Bank in Douglas, said many ranchers in the northern part of the county have oil leases or wells which have helped them support ranch operations. With dropping prices, the

royalties paid landowners have also declined sharply.

"I think, as everybody talks about, we are going to have to diversify our industrial base in Wyoming," said Douglas Mayor Dick George. "We are trying to do that in Douglas."

One bright spot has been the announcement that Fremont Iron and Steel plans to locate a mini-steel mill in Douglas. The plant would recycle scrap into construction and building materials. When operational, the plant could employ as many as 260 workers.

Campbell County is a trove of energy treasures. It is by far the state's largest coal producer (accounting for 80 percent of the state's total production in 1985), as well as being the state's leading producer of oil (producing 24.8 million barrels in 1985). While the drop in oil prices hurt Campbell County, local officials argued that relative stability in coal employment had buffered the impact.

"Everything is relative," said Gillette City Administrator John Darrington. "I think Gillette has one of the stronger economies in the state. We have to get to a point where we starting looking so closely at ourselves that we think we've got a major depression on our hands. We've got about 14 active coal mines. A number of these coal mines have multiple contracts. I moved here from Rawlins. The mines down there have single contracts. So we're not as susceptible to the fluctuations of a particular utility. Coal is soft. But there is a capacity here, and we are able to mine at low cost. That is going to keep people working in this area."

But the impact of falling prices on local drilling companies was undeniable. At Cyclone Drilling, the company's six rigs were stacked. And price was only part of the problem, according to Dale Jaeger, Cyclone's drilling superintendent. Fluctuations in price, and uncertainty concerning where the price would stick, had made the situation doubly difficult. Without higher prices that are stable over time, Jaeger saw little prospect for increased drilling activity. "We'll probably be lucky if we keep one or two rigs running," he said.

Scotty Ostlund, a Gillette realtor, said the impact of falling oil prices did not emerge suddenly. "Most of the people in the oil fields felt the pressure come slowly and put their house on the market earlier," he said. "There was a lot of doomsday stuff going on, where people thought as soon as school was out, we were going to have this mass exodus with everybody leaving town. That just didn't happen."

There were, however, more houses on the market, averaging about 500 a month through the spring and early summer, not including properties for sale by owners. Ostlund said that would probably compare to about 350 during comparable, year-earlier periods. In addition, the period between listing and selling had increased from about three months to about six months.

Naval Petroleum Reserve #3, commonly known as Teapot Dome, is one of Wyoming's most unique oil properties. For one thing, it is owned by the U.S. Government and maintains a Navy presence in the person of Lt. Hal Chappelle.

Teapot Dome was set aside as a petroleum reserve for navy ships. Development of the field proceeded into the 1920s. During the Harding Administration, Teapot Dome was at the center of a scandal in which the Interior Department leased the field to Harry Sinclair without competitive bidding. A second naval reserve at Elk Hills, California, was leased to Edward Doheny in the same manner. A subsequent investigation revealed that Doheny and Sinclair "loaned" Secretary of Interior Albert Fall substantial amounts of money. Fall was found guilty of accepting bribes; he was sentenced to one year in prison and fined $100,000. Doheny and Sinclair were acquitted of bribery charges, although Sinclair was later sentenced to prison for contempt of the Senate for hiring detectives to shadow members of the jury in his case.

In 1927, the Teapot Dome oil reserve was shut-in. During the 1940s and 1950s, limited activity occurred to prevent drainage by offset operators. Following the Arab Oil Embargo of 1973, however, Congress mandated that the reserves should be developed at the maximum efficient rate. Although the Navy still maintains its presence, the reserve is currently operated under the U.S. Department of Energy.

"These naval reserves are produced and we sell our oil basically on the open market," said Chappelle. "Now, part of that open market happens to be the Department of Defense. So most of our oil is sold to the Defense Fuel Supply Center, but we do sell to refiners and that sort of thing."

The field produces about 3,000 barrels of oil per day. It is mostly stripper production, in secondary or limited, enhanced oil recovery phases. Approximately 150 contractor employees perform the actual field work.

Teapot Dome has experienced many of the problems encountered in the oil patch generally. Chappelle said the effect of falling oil prices on Teapot Dome has been dramatic. Contractor employees have been laid off and approximately 40 wells have been shut-in. Criteria for shutting-in wells have also been revised. Previous scenarios looked at $22-per-barrel oil at the low end. "We had to go down and look at $10 per barrel and $5 per barrel," said Chappelle. "'What if' scenarios now are based on, 'if this well goes down, is it worth even trying to bring it back?' In other words, if the pump goes down, is it even worth spending the money to move a pulling unit out there to repair the well?" The same applies to pumping wells. When does the electricity and daily maintenance become more expensive than the oil produced? Given the current oil market, the answer is more often than a year ago.

Think of oil, and the first place that

comes to mind probably would not be Hot Springs County. Yet Hot Springs County depends heavily on oil revenues. More than 88 percent of the county's total assessed valuation in 1985 was based on oil and gas.

Hot Springs County officials were already thinking "downward" before the big price declines earlier this year. In the short-term, some price declines were experienced late in 1985. In the long-term, officials knew many of the fields are old, so a gradual decline over many years was predicted.

"We know we had a problem," said Hot Springs County Planning Director George Dearborn. "We knew our oil is gradually running out and our assessed valuation would drop, but we had no way to plan for something as immediate as this (the price drop since January). Obviously, no matter what happens, we're in for one very difficult year."

In Hot Springs County, total assessed valuation on oil for 1985 was approximately $195 million. In 1986, valuation dropped to about $172 million. Since the assessed valuation is based on the previous year's production and price, the big price drops this year will not be reflected until the 1987 assessments. In Hot Springs County, the betting is that total assessed valuation on oil will drop to about $100 million--about half its 1985 level.

More thought should be given to increasing tourism in the area, said Dearborn, with Hot Springs State Park a major drawing card. The area may also be able to attract a small industry or two if the principals like the area and high shipping costs do not thwart the business. Neither, however, can be viewed as panaceas for current, oil-related difficulties: "Everybody has an idea about how we're going to diversify, and how we're going to get to some magic point someday where 90 percent of the assessed valuation isn't tied up in oil; it's diversified, maybe oil's 20 percent or something. It's a little bit difficult to see. Minerals in one form or another will always be important for Wyoming", he said.

While some diversification and expansion is no doubt possible, Dearborn said the state must also exercise care. In the zeal to attract new businesses, too many regulations could be relaxed, the ultimate effect of which might be to attract "the fly-by-night operation" that ends up doing more harm than good.

Bill Flinn, branch manager of TRW Reda Pump in Thermopolis, said as of late June his firm had laid off 27 people locally as a result of the slowdown in oil activity. Due to the low price, Flinn said the power costs associated with some marginal wells had outstripped the return potential.

"In this country," said Flinn, "you find a well that'll maybe make 10 or 15 barrels of oil, but you may be moving 5,000 barrels of fluid a day. Mainly, the reason they've had to shut some of them down is the power cost" related to moving the fluid.

At the same time, in some more productive wells operators are almost obliged to keep running despite the low prices. "There's a lot of times they can't shut them down because they're in a water flood situation," said Flinn. "They shut down, then they're liable to lose that well completely. You pretty much have to keep them pumping, because if you lose her, most of the time they've lost it completely."

In Fremont County, the drop in oil prices was only the final chapter in a minerals calamity that began several years ago. Since 1980, the uranium industry has all but disappeared. In 1983, the Atlantic City mine and mill closed. Then the price of oil dropped. "It is like a negative spiral," grumbled one businessman. "The worse things get, the worse they get."

In Riverton, the real estate industry has been seriously impacted. By late June, Robin Rucker, a real estate sales person for Fremont Realty, said there were approximately 600 properties on the market. Between November 1985 and June 1986, Rucker estimated that property values had dropped 30 percent.

Motels were particularly hard hit by the loss of commercial traffic. Jack Cross, a Riverton motel owner and real estate broker, said seven motels had gone broke, disappeared, or changed hands since October 1985. Houses previously selling for "$60,000 are down to $30,000, or for $75,000 are down to $25,000 or $30,000," according to Cross. "Your very expensive housing has really taken a dive. The lower end, they are just not buying. VA(Veterans' Administration) has a house they are asking $4,000 for and that includes the lot. Now, granted, it is not much of a house, but it's still a house." Cross said the house hadn't moved in 10 months.

Cross asserted that part of the state's current difficulties stemmed from shortsightedness during the boom years. "We were exporting something out of the state--coal, iron, oil. During that period of time, we did not take some of those bucks and develop anything in case it stopped. Nobody thought it would stop, and now we are just up a bush," he said.

Riverton Mayor Jim Soumas and his wife, Georgia, lost a motel and restaurant in the rough economic waters. Despite setbacks suffered in the community, Soumas said the spirit has remained good. "There is a spirit in this community that keeps stores open, that continues to look for new economic development," he said. Night rodeos were instituted on a two-nights-per-week basis during the summer to attract more tourist trade. New ideas also are being explored to increase electronics-manufacturing activity, including an idea for a device that would produce addresses and bar codes on envelopes.

"We don't perceive there is going to be anything real dramatic," said Soumas. "We don't have a General Motors plant coming to town or anything like that. We just continue

Table 2: Combined Oil and Gas Valuation as a Percentage of Total Assessment (1985) by County.[1]

County	1985 Valuation Oil	1985 Valuation Natural Gas	Total Assessment	Oil and Gas Valuation as a % of Total Assessment
Albany	$ 3,799,760	---	$ 104,662,113	3.63%
Big Horn	127,436,160	$ 4,818,245	180,116,087	73.43
Campbell	662,235,907	101,115,514	1,738,582,032	43.91
Carbon	71,758,227	205,245,306	533,632,439	51.91
Converse	236,842,608	33,233,768	374,634,727	72.09
Crook	106,432,368	18,686	141,781,221	75.08
Fremont	135,586,297	152,070,988	405,692,320	70.91
Goshen	451,292	---	53,713,573	.84
Hot Springs	195,430,483	396,383	220,769,209	88.88
Johnson	75,741,509	2,092,714	122,404,049	63.59
Laramie	16,270,544	143,464	251,929,382	6.52
Lincoln	13,336,422	110,741,244	297,085,987	41.76
Natrona	196,309,075	25,819,408	495,152,617	44.86
Niobrara	29,200,311	1,026,646	51,325,181	58.89
Park	476,860,428	21,776,213	589,628,240	84.57
Platte	4,929	---	132,515,730	.004
Sheridan	4,962,760	---	147,133,208	3.37
Sublette	43,913,790	83,482,514	166,447,950	76.89
Sweetwater	254,065,361	265,003,530	1,147,428,344	45.24
Teton	---	---	75,515,821	---
Uinta	346,952,770	471,003,183	945,524,897	86.51
Washakie	49 520,424	1,686,133	92,311,650	55.47
Weston	81,051,919	4,656,864	121,060,038	70.80

[1]The data shows, in general, the extent to which Wyoming counties relied on oil and gas valuation before the dramatic decline in oil prices during the first half of 1986. The data does not reflect 1986 prices.

Source: Department of Revenue and Taxation, Ad Valorem Tax Division. 1985 Annual Report.

Table 3: Direct Mineral Revenues to Wyoming City and County Governments (For FY 1987)[1]: Before and After Projections.

County	Estimates October, 1985	Estimates May, 1986	Percent Decrease
Albany	3,963,091	2,292,279	42.2%
Big Horn	1,621,183	977,179	39.7
Campbell	3,439,052	2,014,344	41.4
Carbon	3,334,183	1,969,772	40.9
Converse	1,858,277	1,096,043	41.0
Crook	594,611	358,913	39.6
Fremont	4,381,238	2,570,020	41.3
Goshen	1,409,930	839,535	40.5
Hot Springs	820,084	487,337	40.6
Johnson	833,882	492,544	40.9
Laramie	9,017,644	5,237,651	41.9
Lincoln	1,655,837	995,436	39.9
Natrona	9,946,901	5,777,612	41.9
Niobrara	374,879	230,043	38.6
Park	2,734,461	1,601,347	41.4
Platte	1,500,930	888,936	40.8
Sheridan	3,167,888	1,852,549	41.5
Sublette	573,993	348,111	39.4
Sweetwater	6,103,922	3,561,943	41.6
Teton	977,259	571,591	41.5
Uinta	2,177,561	1,286,814	40.9
Washakie	1,283,087	752,284	41.4
Weston	950,150	560,017	41.1

Source: Legislative Service Office.

[1] Reflects severance tax distribution to cities, towns, and counties, and federal mineral royalty distribution to cities and towns.

to try and nibble away at the loss of jobs."

Fremont County Planner Raymond Price estimated that the county population had dropped by about 1,200 since 1983. According to population estimates prepared by the Fremont County Planning Department in November 1985, the populations of Lander, Riverton, Shoshoni, and Jeffrey City had declined over the period. Since 1980, the biggest drop occurred in Jeffrey City as a result of layoffs in the uranium industry. The population of Jeffrey dropped from 1,882 in 1980 to 504 in 1985, according to the estimates.

In several Wyoming communities, officials have been wary of population "exoduses" resulting from declines in oil activity. "When U.S. Steel left," Price said, "everyone was surprised that we didn't have an exodus that summer." He pointed out, however, that such population movements can be more like trickles than floods. Laid-off workers run on their unemployment for as long as possible; persons who take early retirements during reductions-in-force often remain in the community. A spouse not previously in the labor force might find a job, or perhaps the spouse is already employed and the family finds ways to live on less income. Or maybe a person simply has no place else to go. At the same time, a business may be able to run on its reserves. If a decision to move is finally reached, it might be many months after the fact of the layoff. And since circumstances vary from one person to the next, the out-migration of those who decide to leave could be spread out over a relatively long period of time.

In terms of future economic prospects, Price said the county might do well to focus on small businesses. Transportation, due to limited air and rail service, would be a major impediment for larger firms, he said. By the same token, Price doubted that tourism could fill the void left by declines in the mining industry: "I just don't see Lander as a destination tourist place," he said. In recent years, a Lander group tried to develop a convention center but couldn't get the financing, according to Price. "I think a convention center for Lander would be just ridiculous," he said, "because I don't think you can pull that many conventions into Lander. I mean, I'd like to do it, but I just don't think it would work."

In southwestern Wyoming, employment has been buoyed by construction work related to Exxon's LaBarge Project. Work on the second phase, however, was postponed at least until crude oil prices improve. Carbon dioxide, one of the main products of the Shute Creek Plant, is intended for use in enhanced oil recovery (EOR) projects. With the drop in oil price, many such projects have been rendered economically impractical.

Major construction activity in the Rock Springs-Green River area helped soak up much of the available housing, which had been in oversupply due to previous cutbacks in such industrial segments as the trona industry. As construction on the LaBarge Project and Chevron's fertilizer plant south of Rock Springs wraps up this summer, an oversupply situation with respect to housing is expected to return. In addition, the slowdown in oil activity will likely complicate matters.

In terms of basic activities, Sweetwater County has one of the most diverse local economies in the state. But rather than existing across basic sectors, the diversity is concentrated within a single sector--the powerful mining sector. Sweetwater County produces large quantities of oil and natural gas. It is the leading coal producer in southern Wyoming. In addition, Sweetwater County contains the world's largest known deposits of natural soda ash. Among the energy minerals, coal, oil, and natural gas account for roughly equal shares of the county's total minerals valuation. Based on 1986 data, coal accounts for 33.8 percent of the total, while oil accounts for 27.1 percent and natural gas accounts for 27 percent.

Because the mining sector plays a preeminent role in Wyoming's economy, Sweetwater County Planning Director Dennis Watt said the state should be exploring ways to "add value" to existing minerals activity. Research and development work should be undertaken to expand product lines using existing mineral resources; or perhaps close cooperation between the state and major manufacturers could be turned into more effective marketing strategies. In any case, Watt proposed that portions of state mineral trust funds should be committed to the effort.

"I believe part of that trust fund should have been committed some time ago for research and development projects that deal directly with our mineral resources," he said. "That's where I believe the 'rainy day' account should have been. You don't save it for when it rains. You begin to set aside and expend portions of that fund for a long-term investment in diversifying the product lines of the minerals that we know exist."

Watt said that reviving minerals activity could also involve trade-offs. He cited the taxation of carbon dioxide as an example. "On the one hand, you can certainly gain some revenue," he said, "but on the other hand you are trying to increase the life of oil fields in the state. So the question is how far does one tax something which was going to add even additional benefit?"

As for the future, Watt said the size of the permanent construction workforce would probably return to near historic levels. "From our modeling of the local economy, we feel there's a permanent construction workforce of approximately 800," he said. "That's the level it has been at historically in our county for the past 15 to 20 years. So depending upon the nature of the projects, we believe there is enough activity to maintain 800 individuals within the construction sector."

County planners have also conducted an economic base analysis of Sweetwater County

recently. Among other things, the analysis could provide clues to future economic expansion, according to Planner Steve Watson.

Natural gas, often an adjunct to oil production, has found itself in the midst of oversupplies as well. Richard Erickson, operations superintendent at the Table Rock Gas Processing Plant east of Rock Springs, said while the last layoffs were in 1983, other reductions-in-force had been made through attrition. The plant is unique for the Red Desert in that it processes sour gas. However, the future of the plant is in doubt due to depletion of the sour gas resources in the area. Without the discovery of new sour gas, the plant could be closed by the end of this decade. Erickson said according to current estimates, the reserves could be down to one-fourth their present size by 1990.

At Colorado Interstate Gas Company's District Office in Rawlins, Field Superintendent Richard LeBeau said the district's pipelines were operating at less than half capacity as of late June. While sales slack off during the summer months, LeBeau said activity last winter was also slower than usual.

The impacts of falling oil prices have been less dramatic in Albany and Laramie counties than in other parts of the state. Historically, the two counties have not shared in the "booms" to the same extent as some Wyoming counties. Likewise, they have not suffered through the "busts" as acutely.

Due largely to the presence of the University of Wyoming, Albany County's economy depends largely on the government sector, a pattern that remained unaltered through the energy boom years of the 1970s. In 1973, the government sector ranked first among contributors to personal income, accounting for 42.9 percent of the total. Services ranked second (contributing 14.23 percent), followed by retail trade (12.28 percent). By 1983, the pattern had remained unchanged. Government was still the most important contributor to personal income (46.9 percent), followed by services (14.6 percent) and retail trade (10.9 percent). In terms of total employment, the government sector accounted for 6,114 jobs in 1983, followed by retail trade (accounting for 2,535 jobs) and services (accounting for 2,258 jobs). The mining sector, according to Bureau of Economic Analysis data, accounted for only 19 jobs.

The stabilizing influence of the government sector has been reflected in recent unemployment data. Throughout the spring, Albany County had the lowest unemployment rate in the state. In April, Albany County was the lone Wyoming county to record a jobless rate below the seasonally unadjusted rate for the U.S. as a whole.

However, this does not mean Albany County has not been affected at all by dropping oil prices. Reductions in General Fund projections and declining oil royalty revenues have affected the operations of the University of Wyoming, the county's major employer. In April, state officials estimated that UW's royalty income could be down by $10 million during the biennium.

In Laramie County, the situation is much the same. As the state's capital, the government has been a stabilizing force. In 1983, the government sector contributed 38.3 percent to total county personal income, while the mining sector contributed only .9 percent.

Government has also been the county's largest employer, contributing 13,616 jobs in 1983. Other major employers typically have been in the services; retail trade; and transportation, communications, and public utilities sectors. In 1983, the mining sector employed only 229 persons.

Even though the county is buffered somewhat, Laramie County Treasurer Janet Whitehead said the county is projecting a 40 percent drop in money received from state severance taxes for fiscal year 1987. Last spring, agencies of state government were also required to make cuts due to declining oil revenues.

Among the persons interviewed, there was almost unanimous agreement that the price of oil, as well as other energy minerals, would certainly rise again. The big question is when.

S.T. Mast, IPR

# #

Varied Strategies Offered for Maximizing Tourism Potential

Some places are easy to love. Take Yellowstone Park, for example. It is a wonderland of primitive beauty, complete with helpful rangers and an adequate dose of civilization's refinements located along the way. Yellowstone and Grand Teton are Wyoming's premiere attractions, drawing millions of visitors each year.

But much of Wyoming looks nothing like the parks. The vast, interior spaces of the state seem more fitted to geologists or holy men than to tourists from New Jersey. In the annual migration to the parks, such places often seem as unfriendly obstacles that simply must be overcome. Even the forestlands of the state are unfamiliar. And, of course, time is limited. On two weeks' vacation, it is best not to dawdle too much.

Within this environment, travel-industry people throughout Wyoming seek to earn a living, predicated, at least in part, on how successfully the traffic flow to the parks is temporarily interrupted. Stop a tourist for an hour and a restaurant serves a meal; stop him overnight and $80 might be pumped into the local economy. But breaking up the flow, or redirecting the flow, is no simple task. Counteracting the destination instinct of a Yellowstone-bound traveler requires a powerful antidote, not to mention some very creative marketing. After all, what is the Red Desert to the uninitiated except hot dirt and irritable rattlesnakes? And why should anyone stop in such a place, with the crown jewels of the National Park System looming just over the horizon?

Opinions concerning how best to divert traffic along the "road to Yellowstone," or how to develop fresh rivulets to new recreational allurements, cover a broad spectrum of thought.

Bill Bragg, Wyoming writer and historian, said even in areas of the state that lack the intrinsic charm of the Grand Tetons, much can be accomplished. His approach would be active and highly interpersonal. Among the attractions in the Casper area (where Bragg lives), he counted the Oregon Trail, the Mormon-California Trail, early day forts, and Independence Rock. "Casper has been so busy chasing the mineral dollar that they flat overlooked their great tourist value," Bragg insisted. "I think it is one of the best kept secrets in Wyoming."

In appreciating some things, there is no substitute for direct experience. To get a feel for what is was like to cross the continent along the Oregon Trail, walk a way in its ruts. Bragg would go one better. He would like to see a paved road alongside the trail's original route from Casper to Independence Rock. Bragg called Independence Rock our "most overlooked national monument," a monolithic testament to one of the greatest mass migrations in American history. Today, portions of the rock are protected behind a fence. If Bragg had his way, the fence would come down, even though visitors might then add their names to those of the pioneers: "Heaven forbid!" exclaimed Bragg. "That is what it is--American graffiti. Hell yes, what's wrong with that. Let them do it. That's what it has been for years. Let them walk over and carve their name."

Bragg is also a proponent of people-to-people contacts between Wyomingites--local groups, the Travel Commissioner, and even the Governor--and people in other states. Bragg, formerly with the Wyoming Travel Commission in the 1950s, said the emphasis on the personal approach can be highly effective.

"I remember I use to go back every fall to the Indianapolis Athletic Club," he said. "They had the Indianapolis-Wyoming antelope hunting chapter. They would hook onto the Chicago Northwestern and pull into Douglas. The whole city would be waiting for them. The Moose Club would open up, there would be free drinks, and a one-on-one operation. Ranchers and townspeople would take them hunting."

The ingenuity and creativity of local groups, coupled with an understanding that things Wyomingites take for granted may be marvels to other people, can make an important difference, said Bragg. And the personal touch, whether in the form of a good explanation or a friendly invitation, provides the medium for further expansion of the travel industry. Everyone in town has to be trained as a goodwill ambassador, said Bragg, from motel operators and business people, to highway cops and city clerks.

Gillette would not be penciled in as a

"must stop" on most vacation itineraries. But Campbell County has its own unique qualities. For one thing, it has coal, lots of coal, and big open-pit mines, with earthmoving machines that crawl around the prairie like prehistoric dragons.

Enter an idea. A local motel manager approached Powder River Transportation, a Gillette bus and charter service, and asked if it would be possible to provide a tour of the mines for overnight guests. Powder River Transportation agreed.

Has the idea worked out? "Yes," said Bob Zabel controller for Powder River Transportation. "The people who are going really like them (the tours). It's fascinating to them to go and see a truck with tires that are a lot taller than they are. Most people have the vision of coal mining as underground, like in Illinois or Virginia. They come out and see a huge open-pit, where things are reclaimed nicely. It's just fascinating to them that it can be done, that there is this kind of resource under the ground. The trick, I guess, is like marketing of any kind. The trick is finding the little things that interest people, finding the players who will promote, push, and put together packages and ideas. It seems to me, that is the trick to expansion."

What simple notion might strike a responsive chord among travelers from wholly different circumstances than Wyoming cannot be prejudged. Last year, Zabel said Powder River Transportation had a group that toured from Salt Lake to Yellowstone, across to Mount Rushmore, then on to Rapid City. Along the way, the group took in the coal mine tour. "At the going away dinner," he said, "the majority of these people from California said that the highlight of their trip was the coal mine tour."

A Yellowstone on Caballo Creek? A Crazy Horse sculpted in subbituminous coal? Probably not. Nor is there any prospect that tourism will supplant the mining sector as the giant wheel which turns the economy of northeastern Wyoming. But it all helps.

"If the tour takes off at 9:00 a.m. to 10:00 a.m., then they are not going to get back here until 12:00 noon or 1:00 p.m. They're more likely to stay and have some lunch before heading toward Yellowstone or the Black Hills. Well, if you generate 40 people staying an extra hour and they all spend an extra $2.00 for lunch, it's only $80. But that's $80 more than the economy would have had in Gillette. And if you can multiply that concept, and do it all over the state, then each little town has a chance to increase its share of the tour dollar."

At the other end of the spectrum, some thought has turned toward the development of big attractions that could become destination points in their own right, things a traveler might drive 1,000 miles to see. At the very least, such attractions would be important secondary destinations for travelers to the national parks. Jock Cross, a Riverton real estate broker and owner of a ranch near Dubois, said such potential exists in Fremont County.

Cross suggested a three-pronged approach to increasing stop-over, recreational traffic in Fremont County. The area is replete with western history and lore, argued Cross, and it can be sold to the traveling public if properly displayed. An Indian Heritage Center on the Wind River Reservation has been under consideration. To this, Cross and a group of interested citizens would add a Mountain Man Center near Dubois. The Cross family has agreed to donate 40 acres of prime land in the DuNoir Valley for the Mountain Man Center. On the south end of the county, there is the museum at South Pass. Coupled with the abundant opportunities for outdoor recreation, Cross said, a traveler could easily and profitably spend a week visiting sites in Fremont County alone.

As envisioned by Cross, Fremont County's western americana should be grandly displayed. There is much talk about increasing tourism, said Cross, but much of it lacks imagination. "It tends to be nickle-dime," he said, "Let's put up a sign or billboard. I don't know if that's going to cut it. It is almost like you have to change the mentality of the traveler headed for Yellowstone, who now knows he can spend, and therefore plans, a couple of days in Fremont County."

There are difficulties with county development, said Cross. Lander and Riverton have not always cooperated well in the past, he said, and the reservation is virtually a nation within a nation. But economic hard times may force more harmonious efforts. Lander lost a steel mill, Riverton lost almost an entire uranium industry, and the tribes have lost millions in oil revenues (upon which allotment payments are based) as prices plunged.

S.T. Mast, IPR

# #

IPR Scenario Compares Oil, Travel Revenues

As the short-term prospects of Wyoming's energy industries have diminished, increasing attention has been given to ways in which the state might reduce its dependence on the mining sector. Using the theory that it is best to begin by developing existing resources, considerable interest has focused on the travel industry. The extent of travel activity, it is argued, is amenable to creative initiatives by state agencies and local groups. It therefore affords a prime avenue for further development. Off-seasons might be more heavily promoted, or new recreational opportunities might be developed. At the same time, it is important to keep the two activities in perspective. The basic ingredients of one do not readily translate into the basic ingredients of the other, in either employment or tax terms. For purposes of this discussion, a hypothetical well field and a hypothetical travel-service complex will be presented. The tax contributions and direct employment implications of each are then explored. Special thanks are extended to J.F. Evers, head of UW's Petroleum Engineering Department, and to the staff of the Albany County Assessor's Office for their technical assistance in preparing this article.

# #

The IPR oil field and the IPR motel-service complex are microcosms of two activities important to the health of Wyoming's economy. IPR's oil field is small, consisting of four producing wells, not unlike many fields in the state. Each well is drilled to a state-average depth of 5,000 feet, and each produces 30 barrels of oil per day (approximating the state average of 27.8 barrels per day). The field was discovered during the oil boom of the late 1970s and is located on private property. Therefore, total and taxable production are assumed to be the same.

The motel-service complex, built during the past 10 years, consists of a 20-unit motel, with a modest restaurant and gasoline station attached. The IPR motel is located near the off-ramp from the Interstate Highway; thus, it is in good position to serve the tourist or long-distance traveler.

From the standpoint of county property taxes, every piece of equipment in IPR's oil field is subject to tax. This includes two, 650-barrel storage tanks, two separators (one test and one production), 2,600 feet of 2-inch gathering line, a 6-foot-diameter, heater-treater combination, and four, 20-horsepower pumping units. The tax is calculated by taking 11.5 percent of the current depreciated value (provided by the state's "Guide for Assessment: Oil Field Equipment and Tankage"), and multiplying the result by the county mill levy. In this case, the rural mill levy is 65.38 mills. Using this method, the county property tax on IPR's oil field equipment thus amounts to $337.60.

However, the equipment itself is only part of the picture. The county also collects tax on the value of production, which unlike the equipment, is taxed at 100 percent of current value. From its four wells, the IPR field produces 43,200 barrels of oil per year. Assuming a price of $15.00 per barrel of oil produced, the production has a value of $648,000. When multiplied by the rural mill levy, the resultant tax amounts to $42,366.24.

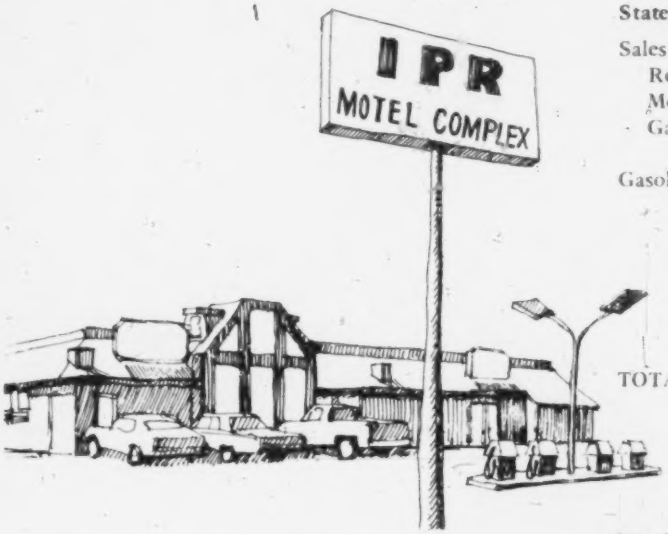
In addition, the state collects taxes on production in the form of the mineral severance tax. Since the severance tax on oil is 6 percent of the value of production, the tax derived by the state from IPR's production would be $38,880. A percentage of the severance tax collected by the state is distributed by direct grant to cities, towns, and counties, based on population. Therefore, of the total value of production, .75 percent, or $4,860, would be distributed to all cities and towns, and .25 percent, or $1,620, would be distributed to all counties. Assuming that IPR's town has a population that is 3 percent of the total population of all Wyoming cities and towns (or 9,932 people), the town would derive a total of $145.80 in severance tax revenue. IPR's county would derive a total of $48.60 in severance tax revenue, assuming it has a population that is 3 percent of the state's total population (or 14,086 people). (Taxes are also levied against other products associated with oil production, such as natural gas. In our example, however, production is limited solely to oil.) Because the field is located on private land, IPR is not required to make federal royalty payments.

From its four-well field, then, IPR would pay a combined total of $81,583.84 in state and local taxes. Of this amount, local governments would receive a total of $49,183.84.

In terms of employment, the IPR oil field provides direct employment to two persons. A pumper spends about one-third of his time in IPR's oil field and the rest of his time in adjacent fields. He is paid at the rate of $14.22 per hour. A full-time driver is also employed to transport the oil. He is paid by IPR, at an hourly rate of $12.55 per hour, while the truck is leased.

The IPR motel-service complex produces tax revenues from a variety of sources. The 20-unit motel has an appraised value of $225,000, while the restaurant building has a value of $55,000 and the gasoline station building has a value of $30,000. The land itself has a value of $70,000. Property taxes are calculated on a city levy of 74.04 mills. Thus, the property taxes levied by the county on the land and buildings would amount to $2,250.82.

In addition, county taxes are collected on



TAX CONTRIBUTIONS

State Government		Local Government	
Sales Tax:		Property Tax:	
Restaurant	$1,726.00	Land & Bldg.	$2,250.82
Motel	2,251.00	Personal:	
Gas station	100.00	Motel	202.87
		Restaurant	86.33
Gasoline Tax	21,000.00	Gas station	95.19
		Sales Tax:	
		Restaurant	863.00
		Motel	1,115.00
		Gas station	50.00
		Gasoline Tax	3,000.00
TOTAL	$25,077.00	TOTAL	$7,663.21

Combined Tax Revenues: $32,740.21

Description
20-unit motel, with restaurant and gas station attached
Located near the off-ramp from the Interstate Highway
Built during the past 10 years

TAX CONTRIBUTIONS

State Government		Local Government	
Severance Tax	$32,400.00	Property Tax:	
		Equipment	$ 337.60
		Value of production	42,366.24
		Severance Tax:	
		IPR's town	145.80
		IPR's county	48.60
		Other cities, towns, and counties	6,285.60
TOTAL	$32,400.00	TOTAL	$49,183.84

Combined Tax Revenues: $81,583.84

Description
4 producing wells, drilled to a depth of 5,000 feet
Each well produces 30 barrels per day
The oil is valued at $15 per barrel

personal property associated with the complex. The condition of the rooms is good, so the personal property in the rooms is valued at $137.00 per room. The total tax collected on motel personal property is $202.87. In the restaurant, tables, silverware, stoves, refrigerators, and similar items are also taxes as personal property. By assuming a total value of $20,000 on such items (with a fourth-year depreciation factor), the tax collected on restaurant personal property would be $86.33. In the gasoline station, tanks, pumps, and tools are among the items considered to be personal property. Again, by assuming a total value of $20,000 on such items (with a fourth-year depreciation factor), the tax collected on gasoline station personal property would be $95.19. Taken together, county property taxes on IPR's motel-service complex would amount to $2,635.21 for the year.

In addition, the county benefits from sales tax collections made by the motel and restaurant portions of the complex. During the year, the restaurant receives $86,400 in total receipts. Since the complex is located in a county with a 3-percent sales tax, total tax dollars derived from restaurant sales amount to $2,592. One-third of total sales tax collections, or about $863, is returned to the county, while two-thirds, or roughly $1,726, are retained by the state.

Activity in the motel portion of the complex is highly seasonal. During the three-month summer season, the average nightly occupancy rate is 80 percent and the average amount collected per room is $35.00. During the rest of the year, the average nightly occupancy rate is 40 percent and the average collected per room is $28.00. During the year, then, the motel portion of the complex collects $112,672 from its room rentals, with total sales taxes amounting to $3,380.16 (about $1,115 of which is returned to the county while $2,251 is retained by the state).

While gasoline sales are exempt from sales taxes, a special gasoline tax is collected on each gallon dispensed. The tax rate is $.08 per gallon. One cent per gallon is returned to the county or city of origin. Gasoline sales are highly seasonal, averaging 40,000 gallons per month from June through August and 20,000 gallons per month during the rest of the year. For the year, then, the station sells 300,000 gallons of gasoline, yielding total gasoline tax revenues of $24,000. Of this amount, $21,000 is retained by the state and $3,000 is returned to local government. Sales of related automotive products, such as motor oil, are subject to state sales tax. The station sells $5,000 worth of such products each year, yielding sales taxes of $150 ($50 of which is returned to local government while $100 is retained by the state).

Thus, local governments receive $7,663.21 from the motel-service complex through taxation. This compares to the $49,183.84 received for the year from taxes on IPR's oil field. At the same time, the state receives $25,077 from taxes on the complex, the majority ($21,000) from taxes on gasoline. This compares to the $32,400 received by the state from severance taxes on IPR's oil production. Overall, then, IPR's oil field generates $81,583.84 in combined tax revenues, while IPR's motel-service complex generates combined tax revenues of $32,740.21.

In terms of employment, the motel complex employs a full-time manager who is provided living quarters and a commission on room rentals. Two part-time maids are employed during the height of the season, dropping to one part-time maid during the off-season. The maids are paid minimum wages of $3.35 per hour. The restaurant employs a manager, two cooks, and three waitresses. The manager is paid a salary of $1,500 per month, the cooks are paid at a rate of $5.00 per hour, and the waitresses are paid $2.25 per hour plus tips. Again, the levels of employment and the mix of part-time and full-time employment tend to vary depending upon the time of year. The gasoline station, which offers no services except gasoline and miscellaneous sales on products such as motor oil, employs a manager and two part-time assistants. The manager is paid $1,200 per month, while the two part-time assistants receive the minimum wage. Depending upon the time of year, then, the motel-service complex might employ as many as 12 persons either full-time or part-time. When comparing employment in the oil field and the motel-service complex, it is clear that while the motel-service complex employs more people, the workers in the oil field are much better paid.

A final word should also be said about orders of magnitude. By the end of 1985, according to World Oil Magazine, there were 12,038 producing wells in Wyoming, with average daily production of 27.8 barrels per day. A mid-summer estimate by the Wyoming Hotel/Motel Association suggests there are between 460 and 500 "lodging" establishments in the state, not including commercial campgrounds. No reliable estimates could be obtained for the number of restaurants or gasoline vendors.

S.T. Mast, IPR

\# \#

Labor Force Contracts as Economy Slows

The Wyoming labor force has emitted some strange signals in recent months. In the face of slumping oil activity, the size of the labor force actually grew during April and May when compared to year-earlier levels, according to Employment Security Commission data, before contracting in June. The contradictory signs, however, seem to be consistent in one respect: Both can be interpreted as evidence of a slowing economy.

In June, the size of the labor force shrank by 7,300 from June 1985 levels, following two months in which the labor force increased over year-earlier levels. During June, the number of persons with jobs dropped by 13,500 while the number of unemployed persons grew by 6,200, when compared to June 1985 levels. Statewide the June jobless rate stood at 9.5 percent, seasonally adjusted.

The performance of the labor force during June seems consistent with slowing economic activity. At first glance, however, the performance of the labor force during April and May borders on the mysterious. It therefore warrants closer examination.

The size of the labor force is computed by adding the numbers of persons employed and the numbers of persons unemployed. During April 1986, the labor force total stood at 253,300, up 2.8 percent from April 1985. At the same time, however, the number of employed persons declined by almost 1,500. The unemployment rate hit 10.8 percent, compared to 7.7 percent in April 1985. Double-digit unemployment was recorded in 17 of Wyoming's 23 counties, led by Uinta County at 15.1 percent. Thus, while the labor force continued to grow, the level of employment declined and the unemployment rate shot up. The hardest hit sectors included oil and gas, retail trade, and transportation. The April rate was the fourth highest in the nation.

In May, the labor force of 256,200 workers was up only slightly from May 1985 figures, while the employed labor force declined by 4,300. Double-digit unemployment continued to prevail in about half of Wyoming's 23 counties. The hardest hit sectors continued to be oil and gas, retail trade, and transportation.

It appears, then, that more people entered the labor force during the spring seeking fewer jobs. With the loss of higher paying oil and gas employment, it is likely that spouses also entered the labor force in an effort to make up a portion of the lost income. Thus, at least part of the growth in labor force size probably can be attributed to new entrants who, in effect, were "squeezed" into the labor force. Another source of new entrants was persons who entered the state in search of employment. This source seemed particularly applicable in southwestern Wyoming, where many people migrated in from elsewhere in association with the LaBarge Project.

The state labor force growth occurred in ten of Wyoming's 23 counties. On a percentage basis, Campbell, Lincoln, Sublette, Sweetwater, and Uinta counties experienced the highest gains from April 1985 to April 1986.

Lincoln County experienced an increase of 25.9 percent in labor force size when comparing April 1986 and April 1985, the largest such increase in the state. Marie Nelson, manager of the Job Service Center in Kemmerer, said one factor in labor force growth was the number of persons from outside the state who followed the LaBarge Project. The same held true in Sublette and Sweetwater counties, according to Rock Springs Job Service officials, where the LaBarge project continued to draw people, particularly from Texas, Oklahoma, and Arkansas. Persons laid off at a fertilizer plant in Idaho also came into the state in hopes of getting employment at the Chevron fertilizer plant south of Rock Springs, according to the officials.

Persons who followed these projects, however, were not always successful in finding employment. Thus, along with substantial increases in labor force size experienced during the spring, southwestern Wyoming counties also experienced substantial increases in unemployment.

In Uinta County, Bob Simon, manager of the Evanston Job Service Center, felt growth in the county's labor force last spring likewise could be attributed to the LaBarge Project. Employment prospects were further bolstered by planned construction work in the Anschutz and Painter oil fields, prompting unemployed persons to gravitate to the area. In May 1986, Uinta County's unemployment rate stood at 13.1 percent, up from 7.3 percent in May 1985.

While Laramie County did not record a large percentage increase, it added 1,513 people to Wyoming's labor force from April 1985 to April 1986. Dave Marshall, manager of the Cheyenne Job Service Center, indicated that there were three factors which contributed to the county's growth: (1) an increase in the number of part-time jobs created in the service sector, (2) an increase in the number of jobs made available in the financial field due to the decrease in interest rates, and (3) the impact of the MX missile construction projects, which hit peak employment during the first and second quarters of 1986. Laramie county continued to have one of the lowest unemployment rates in Wyoming during April, May, and June 1986 (7.1 percent, 5.7 percent, and 6.0 percent respectively).

S.T. Mast and Ruth Tebbutt, IER

# #

Table 41 Employment and Unemployment in Wyoming, 1965-1985.[1]

Calendar Year	Average Civilian Labor Force	Average Civilian Employment	Average Total Unemployment	Average Total Unemployment Rate
1965	140,100	134,000	6,100	4.4
1966	139,300	133,900	5,500	3.9
1967	134,000	128,500	5,500	4.1
1968	139,200	133,900	5,300	3.8
1969	141,900	136,200	5,700	4.0
1970	137,950	131,810	6,140	4.5
1971	141,550	135,110	6,440	4.5
1972	135,800	130,609	5,191	3.8
1973	142,985	138,207	4,778	3.3
1974	153,072	147,885	5,187	3.4
1975	165,869	158,800	6,981	4.2
1976	179,000	171,000	7,000	3.9
1977	193,000	186,000	7,000	3.6
1978	209,000	202,000	7,000	3.3
1979	223,000	217,000	6,000	2.7
1980	235,000	225,000	9,000	4.0
1981	250,000	239,000	10,000	4.1
1982	256,000	241,000	15,000	5.8
1983	263,000	241,000	22,000	8.4
1984	254,000	238,000	16,000	6.3
1985	253,000	235,000	18,000	7.1

[1]The average civilian labor force is the monthly average number of people in the labor force during the year. Average unemployment is the average number of persons who were without work, were able to work, and were available for and seeking work during an entire week. The average unemployment rate is determined by taking average unemployment as a percentage of the average labor force.

Source: Wyoming Employment Security Commission. Statistical Review of Wyoming (1939-1984), and (1970-1985).

Buffalo Rancher Sees Bright Prospects

At the beginning of the 19th century, 60 million buffalo ranged over much of North America. Buffalo were mainstays in the diets and cultures of many Plains Indian tribes. By the end of the 19th century, however, only two wild buffalo herds remained in North America--one of plains buffalo in Yellowstone National Park and one herd of a larger cousin, the wood bison, in Canada. In the interim, a slaughter of ghastly proportions occurred. White emigrants shot buffalo for sport from trains, or annihilated whole herds for their hides and tongues, leaving the meat for scavengers.

In view of its sad history, it is ironic that the buffalo, barely a hundred years after the waste that drove it to the brink of extinction, is gaining in popularity as a meat animal.

Durham Ranches, Inc., located in southern Campbell County, runs approximately 2,000 head of buffalo. They run no cattle. Ranch operators say business has never been better. Their meat products are sold all over the country. While small retail stores like to feature buffalo, they find their biggest customers are gourmet restaurants. They also find that buffalo meat has moved from a novelty to a repeat item.

The market for Durham Ranches buffalo has remained strong. Last year, the outfit marketed about 1,200 head, with approximately 800 head sold for slaughter. The price was 15 to twice as much as could have been received for beef as meat. Calves sold as breeding animals for between $400 and $500.

Buffalo cost more to raise than cattle because the animals mature more slowly and operators must wait an additional year before heifers can be bred. Buffalo are also hard on fences and corrals. Durham Ranches is investigating the use of two-strand of three-strand electric fences to contain the herd. Such fencing, operators say, could drive down production costs to a level equivalent with beef. Despite some higher costs, raising buffalo is a profitable venture, says John Flocchini, manager of Durham Ranches, Inc., in an environment where many beef producers are floundering.

Working with buffalo can be a trying experience. They can be headstrong and cantankerous. "It seems like sometimes when we're working with them they just run beautiful," says Flocchini. "Then the next day it's a whole different set of circumstances. Because the weather is a little different or what, we don't know for sure."

Buffalo are also difficult to work from horseback. Some gathering can be done from horseback "but when you start to crowd them it's pretty tough with a horse. Try to force them through a gate and it can be pretty tough," says Flocchini. A mature bull weighs about a ton, so roping is out of the question. In addition, calves are easily injured by roping. Even assuming a buffalo calf can be heel-roped and dragged in the manner of cattle, a person would have to contend with a highly protective mother buffalo. "They're not afraid, and they are pretty protective of the calf," says Flocchini. "If something comes in between them and the calf, they'll have at it, whether it's a pickup, a horse, or a person."

A buffalo's strong constitution, even though it may sometimes border on cussedness, may also be one of the animal's greatest virtues. Buffalo are extremely hardy. In terms of winter survivability, Flocchini says buffalo are a country-mile ahead of cattle. "You will never see buffalo bunch up and drift with a storm," he says. During the spring of 1984, a severe snowstorm raked the Powder River Basin. Thousands of cattle and sheep piled along fences and died in the cold. Flocchini says only two buffalo calves were lost in the storm--and they didn't freeze, but fell through some ice and drowned in a pond.

During calving season, when cattle ranchers must maintain a constant vigil, the crew at Durham Ranches hardly breaks its routine. Mother buffalo require little human attention in producing healthy offspring.

Flocchini sees a bright future for buffalo in today's marketplace. It is a lean, red-meat product in a health-conscious society. Indeed, Durham Ranches is exploring ways to expand its operations. "I don't think the surface has even been scratched," says Flocchini.

S.T. Maat, IER

ECONOMIC CHANGES

ECONOMIC CHANGES

(Editor's note: The purpose of this section is to point out areas of the Wyoming economy in which noteworthy changes occurred, or in which existing trends were significantly accentuated, during the latest reporting period).

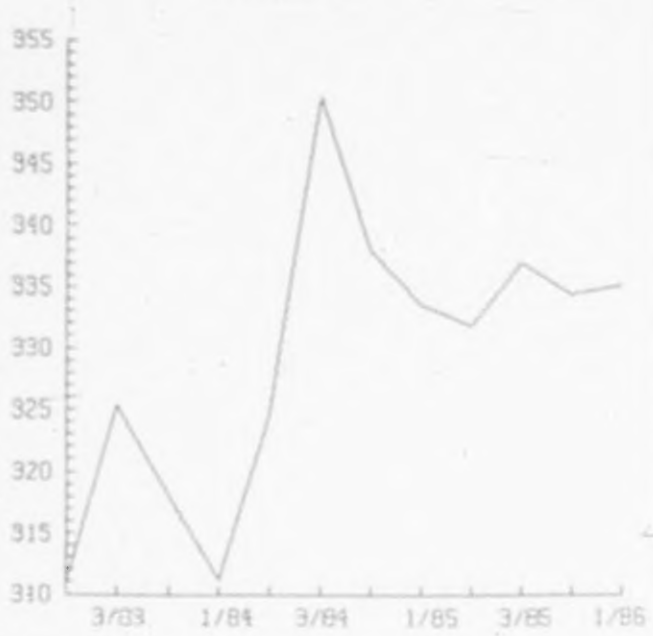
Changes in employment, and energy and mineral production statistics are among the highlights recorded in the Update's first quarter 1986 statistics.

Statewide, the labor force was up 1.42 percent during the first quarter of 1986 compared to the fourth quarter of 1985. This is an unusual trend, considering that the labor force series traditionally bottoms out during the first quarter of each year. The size of the labor force during the present reporting period also represents a 2.64 percent increase above the first quarter 1985 level.

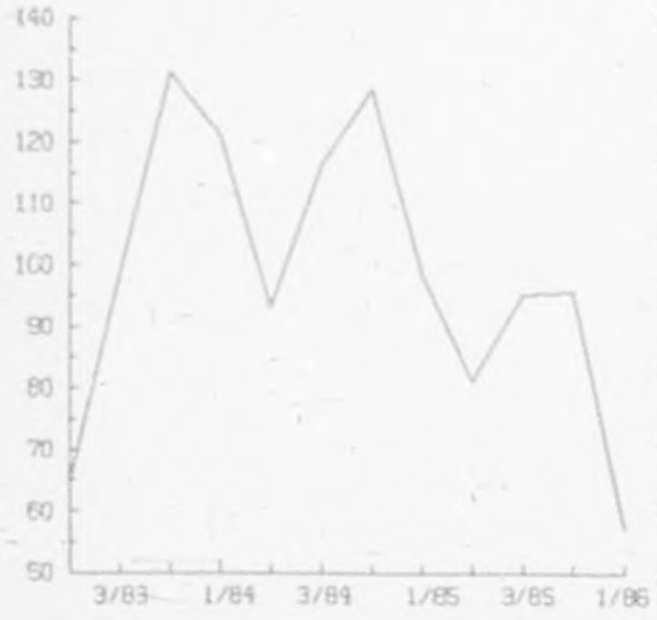
As oil prices have plummeted, so have the quarterly active rig counts. From the fourth quarter of 1985 to the first quarter of 1986, the average number of active rigs in Wyoming dropped 40.63 percent. The first quarter figure of 57 rigs also represents the lowest count recorded during the Update's 12-quarter reporting period; the high for the reporting period was recorded during the fourth quarter of 1983 at 131 rigs.

A large portion of the oil produced in Wyoming comes from large fields which average over 50 years in age (Salt Creek, for example). Because of this, state oil production had remained constant despite the drop in the state's active rig count. At 335,000 barrels per day, first quarter 1986 production was slightly above production for the previous quarter (334,000) and above first quarter 1985 production (333,000).

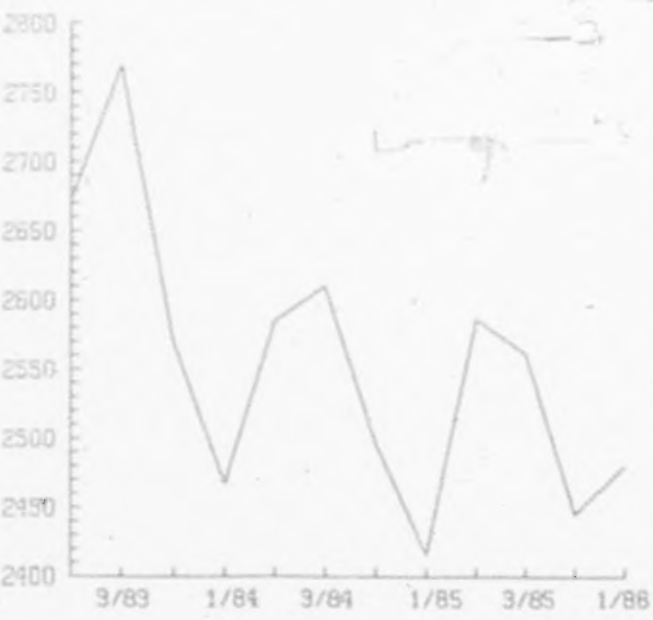
Oil Production



Active Rig Count



Labor Force



WYOMING DATA

Table 5: Agriculture[1]

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. Timber Cut in Wyoming National Forests (MBF) Price Indices[2] (1967=100)	5208.	35941.	47574.	21261.	7625.	48671.	63055.	23591.	6564.	35705.	57834.	27236.
2. Wyoming Crops, Prices Received-Latest	254.	280.	280.	269.	265.	254.	255.	257.	260.	256.	270.	260.
3. Wyoming Crops, Prices Received-Average	253.	268.	279.	270.	270.	255.	253.	254.	259.	260.	267.	262.
4. U.S. Crops, Prices Received-Latest	239.	260.	262.	267.	276.	260.	240.	246.	236.	216.	226.	213.
5. U.S. Crops, Prices Received-Average	244.	255.	258.	266.	275.	271.	251.	243.	239.	224.	219.	214.
6. Wyoming, All Commodities, Prices Received-Latest	246.	239.	244.	252.	242.	254.	248.	253.	243.	242.	234.	242.
7. Wyoming, All Commodities, Prices Received-Average	253.	233.	239.	251.	250.	246.	249.	254.	253.	237.	243.	236.
8. U.S., All Commodities, Prices Received-Latest	243.	248.	256.	265.	262.	252.	247.	246.	235.	219.	234.	222.
9. U.S., All Commodities, Prices Received-Average	247.	247.	249.	264.	264.	259.	249.	247.	237.	225.	230.	223.
10. Wyoming Livestock, Prices Received-Latest	244.	227.	233.	247.	235.	254.	246.	252.	238.	238.	223.	237.
11. Wyoming Livestock, Prices Received-Average	253.	223.	228.	245.	243.	244.	247.	254.	250.	230.	236.	228.
12. U.S. Livestock, Prices Received-Latest	247.	240.	251.	264.	251.	247.	253.	246.	235.	222.	243.	230.
13. U.S. Livestock, Prices Received-Average	251.	242.	241.	264.	256.	251.	249.	251.	236.	227.	240.	232.
14. Prices Paid by U.S. Farmers-Latest	324.	326.	328.	335.	335.	333.	332.	332.	332.	328.	330.	INA
15. Prices Paid by U.S. Farmers-Average	324.	325.	327.	333.	336.	334.	332.	332.	332.	329.	329.	330.[3]

[1] First time readers of WQU should refer to the "Format" page (in back) for an explanation of abbreviations and table formats.
[2] The index for the last month (latest) of each quarter, along with the average of the three monthly indices of each quarter.
[3] Represents the average for January and February only. Figure for March is not available.

Sources: Series 1: United States Forest Service. "Timber Cut and Sold, Convertible Products." Region 2 and 4 reports published quarterly.
Series 2-15: Wyoming Crop and Livestock Reporting Service. Bi-weekly Ag Statistics.

Table 6: Banking and Finance

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. Total Bank Loans and Leases Financing Receivables (T$)[1]	*****	*****	*****	2313197.	2359492.	2368731.	2352704.	2356267.	2348277.	2296857.	2226477.	2173437.
2. Total Bank Deposits (T$)	3669552.	3683748.	3789387.	3747828.	3812354.	3790977.	4005456.	3808654.	3908435.	3959810.	4048702.	3908134.
3. Total Non Interest-Bearing Deposits (T$)[1]	*****	*****	*****	657189.	734297.	723344.	742392.	652223.	643908.	687128.	689811.	624421.
4. Savings and Loan Mortgage Loans (T$)[2]	760041.	775159.	775795.	767125.	775396.	771560.	806660.	780644.	806897.	949722.	929668.	826697.
5. Savings and Loan Deposits (T$)	960250.	966113.	1006927.	1051271.	1087036.	1111213.	1142593.	1161848.	1193339.	1183564.	1166220.	1139851.
6. Prime Interest Rate[3]	10.50	11.00	11.00	11.21	12.60	12.97	11.06	10.50	9.78	9.50	9.50	9.10

[1] During the first quarter of 1984, the Wyoming State Bank Examiner began publishing it's quarterly report ("The Abstract Report of State and National Banks in Wyoming") in a slightly different format. IPR will therefore be altering the following banking and finance data series: total bank loans and total demand deposits. Beginning in the first quarter of 1984, data for total bank loans will include lease financing receivables; data for total bank demand deposits will be replaced by figures for noninterest-bearing deposits. For comparison, the reader can refer to past issues of the WQU.

[2] Only members of the Federal Home Loan Bank Board are included.

[3] Rate is for the last month of the quarter.

Sources: Series 1-3: Wyoming State Bank Examiner Quarterly Report.
Series 4 and 5: Federal Home Loan Bank of Seattle, Monthly Report. Comparative statistical analysis of member institutions.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published Monthly.

Table 7: Business Conditions

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. New Domestic Corporations	410.	366.	309.	359.	359.	332.	273.	308.	307.	248.	283.	308.
2. New Foreign Corporations	259.	331.	292.	260.	249.	259.	244.	224.	259.	279.	217.	251.
3. Total New Corporations	669.	697.	601.	619.	608.	591.	517.	532.	566.	527.	500.	559.
4. Business Failures	68.	52.	58.	59.	64.	67.	68.	70.	78.	58.	72.	74.
5. Value of Business Failures ($)	6400333.	535473.	-8163171.[1]	17789116.	14081414.	11774068.	12763251.	-25485776.[1]	23761569.	-2394988.[1]	8266910.	-933393.[1]
6. Personal Bankruptcies	152.	172.	141.	180.	166.	169.	183.	176.	204.	229.	211.	238.

[1]Assets exceed liabilities.

Sources: Series 1-3: Secretary of State. New and Foreign Corporations. Monthly report.
Series 4-6: Cheyenne Credit Bureau. Wyoming bankruptcy cases, business failures, and value of failures. Weekly publication.

Table 8: Construction

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. New Residential Dwelling Units	1044.	1002.	685.	481.	935.	642.	368.	380.	670.	628.	535.	237.
2. Value of Residential Dwellings Constructed (M$)	70.7	60.3	40.0	28.4	54.4	37.9	23.0	24.3	46.8	42.3	35.4	20.9
3. Value of Nonresidential Construction (M$)	54.4	48.2	59.9	11.5	30.6	36.9	80.0	33.0	75.8	32.1	17.1	14.2
4. Building Permits Issued in Selected Wyoming Cities	3586.	3701.	2138.	2025.	3892.	3546.	2438.	1713.	3315.	3753.	2872.	2547.
5. Value of Authorized Construction (T$)	46402.	68715.	51924.	29471.	42320.	36344.	35282.	23474.	83920.	193451.	15695.	21484.
6. Mortgage Interest Rate[1]	11.90	12.08	11.94	11.56	11.61	12.03	12.05	11.42	11.31	10.69	10.47	10.01

[1]Conventional first mortgage for new home purchase. U.S. average for last month of quarter.

Sources: Series 1-3: F.W. Dodge Division of McGraw-Hill. "Dodge Local Construction Potentials." Published monthly.
Series 4-5: Institute for Policy Research. "Local Construction Reports." Survey of authorized construction in selected cities conducted monthly.
Series 6: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.

Table 9: Consumers

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. New Truck Registrations	3415.	3417.	4363.	3927.	4418.	4102.	4574.	3581.	4052.	5187.	3915.	3343.
2. New Car Registrations	3539.	3671.	3483.	3083.	3741.	3676.	3397.	3012.	3752.	4868.	3177.	3200.
3. Wyoming Personal Income[1] (M$)	5964.	5968.	6082.	6089.	6240.	6332.	6373.	6419.	6623.	6661.	6629.	INA
4. US Disposable Income (B$)	2303.	2367.	2429.	2502.	2554.	2606.	2724.	2739.	2818.	2800.	2847.	2894.
5. US Personal Income[1] (M$)	2703432.	2754946.	2831537.	2918793.	2985650.	3053166.	3107659.	3156982.	3193455.	3207892.	3268059.	INA
6. Latest US Consumer[2] Price Index (1967=100)	297.2	300.8	301.5	303.3	306.2	312.1	312.2	315.3	318.7	320.5	323.4	321.4
7. Quarter's Average US CPI	296.1	299.5	301.4	303.1	305.2	310.0	312.1	313.9	317.7	319.7	322.4	323.0
8. Liquor Sales (T$)	7868.	8455.	9863.	6622.	7478.	8180.	9554.	6360.	7538.	8931.	9526.	6293.

[1]Revised series. Business Week, the previous source for monthly personal income for Wyoming and the U.S., has discontinued its series. Personal income data will subsequently be collected from the Bureau of Economic Analysis, U.S. Department of Commerce. Readers should be cautioned that the two series are not comparable.

[2]Number shown is for the last month of the quarter. CPI shown is the index for wage earners and clerical workers, not the CPI-U. Beginning with the data for January, 1985, the index is affected by a change in methodology used to compute the homeownership component.

Sources: Series 1-2: R.L. Polk and Company Motor Statistical Division. "National New Vehicle Registration Service." Published monthly.
Series 3,5: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published quarterly.
Series 4,6,7: U.S. Department of Commerce, Bureau of Economic Analysis. Survey of Current Business. Published monthly.
Series 8: Wyoming Liquor Commission. Sales data are reported to IPR.

Table 10: Employment and Labor[1]

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. Civilian Labor Force	267248.	276925.	256902.	246802.	258507.	261039.	249652.	241636.	258670.	256138.	244553.	248020.
2. Employment	242087.	253149.	239275.	226897.	240970.	247678.	236455.	223271.	241801.	240889.	226475.	222222.
3. Unemployment	25161.	23776.	17627.	19905.	17537.	13360.	13197.	18366.	17069.	15249.	18078.	25798.
4. Unemployment Rate	9.4	8.6	6.9	8.1	6.8	5.1	5.3	7.6	6.6	6.0	7.4	10.4
5. Initial Claims Filed	10951.	8657.	11117.	10502.	7271.	5255.	8237.	13108.	8047.	6991.	12467.	15095.
6. Applications Received	11787.	12149.	9359.	10290.	11541.	11375.	9688.	11106.	12017.	11424.	11347.	14321.
7. New Non-Agricultural Openings	6185.	7992.	5528.	4679.	9779.	12905.	8655.	7004.	11450.	12640.	9685.	7059.
8. New Non-Agricultural Placements	6608.	10529.	6446.	5946.	9111.	10348.	8331.	6308.	9597.	9656.	9163.	6348.
9. Miners' Average Weekly Hours	39.5	41.8	41.2	42.8	43.2	42.9	43.5	41.4	43.9	43.3	44.5	43.7
10. Miners' Average Weekly Pay ($)	490.96	521.24	519.71	547.39	558.70	552.01	572.47	570.76	591.61	574.69	600.17	601.10
11. Miners' Average Hourly Wage ($)	12.43	12.47	12.60	12.78	12.94	12.87	13.16	13.79	13.47	13.27	13.50	13.76

[1]The most recent year's data are preliminary.
Sources: Series 1-11: Wyoming Employment Security Commission. Labor Force Trends. Published monthly.

Table 11: Energy and Mineral Production

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. Wyoming Coal (TST)	24746.	29784.	27401.	32020.	28964.	31806.	34908.	36243.	31854.	32228.	30508.	33671.
2. U.S. Coal (TST)	180439.	204117.	198085.	227129.	223657.	246163	188471.	220652.	220673.	225484.	211487.	224966.
3. Wyoming Oil (TBPD)	311.	325.	318.	311.	325.	350.	338.	333.	332.	337.	334.	335.
4. U.S. Oil (TBPD)	8658.	8680.	8700.	8737.	8831.	8879.	8942.	8877.	8910.	8901.	8895.	8877.
5. Wyoming Natural Gas (MCFD)	1269.	1050.	1373.	1588.	1376.	1285.	1417.	1601.	1297.	1201.	1348.	INA
6. U.S. Natural Gas (MCFD)	43073.	44703.	48924.	52912.	49076.	47968.	49888.	51347.	45317.	44400.	47203.	INA
7. Active Rig Counts in Wyoming-Average[1]	65.	99.	131.	121.	93.	116.	128.	99.	81.	95.	96.	57.

[1] Due to numerous requests, we will begin reporting the active rig counts in Wyoming for the quarter. Monthly data back to January, 1974 is available from our data base upon request.

Sources: Series 1,2,5, and 6: U.S. Department of Energy. Energy Data Reports. Gas data are published monthly, and coal data are published weekly.
Series 3-4: The Oil and Gas Journal. U.S. and Wyoming Oil Production published weekly.
Series 7: Petroleum Information Corporation, Hughes Tool Company. Monthly Average Active Rig Counts in Wyoming.

Table 12: Government

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. Sales and Use Tax Collections (T$)	46453.	53361.	55424.	55954.	51151.	57132.	59570.	54966.	50917.	63025.	65957.	53816.
2. Violent Crime[1]	274.	409.	241.	221.	318.	350.	334.	304.	275.	350.	319.	292.
3. Nonviolent Crime[2]	4821.	5319.	4219.	3728.	4486.	4790.	4170.	4170.	4969.	5120.	4212.	4294.
4. Stolen Property (T$)	2918.	3005.	2892.	2065.	2627.	2856.	2487.	2244.	2437.	3443.	2447.	2529.
5. Stolen Property Recovery Rate	36.9	40.3	46.1	42.7	42.9	51.5	45.5	51.9	38.5	51.6	41.0	34.2
6. Percent of Crimes Cleared[3]	21.8	24.2	23.5	30.9	22.4	22.9	30.7	28.3	24.0	25.1	28.9	28.2

[1]Murder, negligent homicide, forcible rape, robbery, aggravated assault.
[2]Burglary, larceny, auto theft.
[3]Clearance of a crime indicates resolution of a complaint by arrest or other extraordinary means.

Sources: Series 1: Wyoming Department of Revenue and Taxation, Sales and Use Tax Division. "Net Collections by Business Class by County." Published monthly.
Series 2-6: Uniform Crime Reporting Center for Criminal Justice Research, Division of Criminal Identification, Office of the State Attorney General. "Crime in Wyoming." Published quarterly.

Table 13: Tourism

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
Visitors, National Parks and Monuments												
1. Yellowstone	553986.	1653211.	133088.	63927.	536765.	1561475.	100802.	66776.	592059.	1500133.	103487.	79077.
2. Grand Teton	686326.	1462761.	238442.	136459.	522640.	1373523.	206891.	130583.	517614.	1299635.	181840.	138794.
3. Devil's Tower	87506.	160953.	16894.	9037.	72461.	131447.	15145.	8841.	68885.	135061.	12157.	9237.
4. Fossil Butte	5134.	9120.	4206.	246.	4246.	9107.	1762.	115.	4254.	10434.	1213.	205.
5. Fort Laramie	28311.	56592.	7665.	2352.	27529.	54704.	5527.	2625.	26185.	49165.	3921.	2027.
6. Big Horn NRA-South[1]	44977.	56419.	29358.	18715.	45104.	67403.	26388.	31533.	56612.	77495.	46073.	18574.
Other Tourism Indicators												
7. Traffic Count (Avg. # of Vehicles/Day)	122665.	167385.	97696.	85780.	125371.	169579.	101625.	88135.	131520.	166903.	98463.	90397.
8. Hotel, Motel, and Camp Sales Tax (T$)	1048.	2017.	1397.	979.	1084.	2178.	1389.	932.	1070.	2136.	1370.	862.
9. Gasoline Sales (TGL)	81160.	107116.	79911.	63980.	85891.	102748.	77108.	66798.	83529.	101676.	74304.	62891.

[1]Big Horn Canyon N.R.A. is only partially in Wyoming. Only visitation for the Wyoming part is shown.

Sources: Series 1-6: Monthly visitor use reports of the National Park Service.
Series 7: Traffic Survey Unit - Planning Branch, Wyoming State Highway Department. "Selected Recording Stations Traffic Counter Data." Published monthly.
Series 8: Wyoming Department of Revenue and Taxation. "Sales and Use Tax Summary by County by SIC Major and Minor." Reported monthly.
Series 9: Petroleum Association of Wyoming. Monthly Gasoline Gallonage Report.

Table 14: Utilities[1]

Calendar Quarters	2/83	3/83	4/83	1/84	2/84	3/84	4/84	1/85	2/85	3/85	4/85	1/86
1. Residential Electric Connections	179717.	178762.	178535.	179967.	179536.	178837.	179123.	179451.	181034.	179423.	179609.	179931.
2. Residential Electric Consumption (TKWH)	392223.	294755.	395182.	562483.	437086.	359496.	484523.	542962.	395900.	348469.	510291.	502703.
3. Commercial Electric Connections	31194.	30533.	31404.	32340.	32462.	32874.	32738.	33058.	33730.	33782.	33603.	33606.
4. Commercial Electric Consumption (TKWH)	327565.	353743.	342219.	485953.	437983.	455181.	468378.	504376.	474481.	497271.	512748.	499198.
5. Industrial Electric Connections	3667.	3655.	3624.	3119.	3150.	3122.	3059.	2957.	2926.	2933.	2872.	2927.
6. Industrial Electric Consumption (TKWH)	1388817.	1397176.	1016334.	1456749.	1911229.	2049121.	2479998.	1572877.	1904448.	2159299.	2626516.	1514740.
7. Other Connections[2]	3059.	3164.	2791.	2759.	3155.	3438.	3165.	2916.	3145.	3219.	3112.	3451.
8. Other Consumption (TKWH)	8710.	46427.	13306.	6129.	13775.	50031.	10385.	5321.	19238.	57385.	10970.	11110.
9. Residential Natural Gas Connections	76449.	74638.	75037.	76263.	75081.	74802.	75736.	76112.	75456.	74772.	75826.	76146.
10. Residential Natural Gas Consumption (MCF)	8926691.	2871311.	8444801.	15230399.	8356402.	2804867.	9293655.	14912809.	6892581.	2723293.	9855048.	12757931.
11. Commercial Natural Gas Connections[3]	6869.	6710.	6817.	6881.	6817.	6770.	6859.	6882.	6785.	6651.	6737.	10926.
12. Commercial Natural Gas Consumption (MCF)[3]	5716746.	1792146.	4865053.	9496853.	5231096.	1656779.	5481602.	9319095.	4495896.	1640628.	5816481.	8227469.
13. Industrial Natural Gas Connections	97.	97.	98.	94.	95.	96.	93.	91.	92.	96.	93.	91.
14. Industrial Natural Gas Consumption (MCF)	10221456.	9291988.	13201149.	13193998.	25099377.	12505089.	26405131.	9633325.	12378588.	6370238.	9827421.	10188011.
15. Other Natural Gas Connections[3]	48.	46.	45.	45.	46.	46.	46.	46.	47.	42.	42.	42.
16. Other Natural Gas Consumption (MCF)[3]	322.	5323.	267.	235.	905.	5882.	336.	138.	1739.	8033.	176.	149.

[1] Some small utilities do not report, hence the data are slightly less than actual state totals. The data are consistent. The same utilities' reports are included in each figure.

[2] "Other" includes agriculture, municipal, and other public.

[3] Figures for the first and second quarter of 1983 reflect a change in the authority connections/consumption made by the Northern Utilities. Prior to January 1983, the company listed public authority under the category of other natural gas connections/consumption. Northern Gas now combines public authority connections/consumption with their commercial natural gas connections/consumption.

NOTE: Due to divestiture, Mountain Bell is no longer able to provide IPR with the telephones in service figure; because Mountain Bell accounts for the bulk of telephone mainline service in Wyoming, IPR has decided to discontinue the telephone data series.

Sources: Series 1-18: Reports to IPR by selected electric and natural gas utility companies. Survey conducted monthly.

Average Rents by City, First Quarter 1986*

City	Apartment	Trailer Lot	House	Mobile Home
Cheyenne	$329.68	$132.00	$427.27	$272.76
Buffalo	271.67	105.00	258.50	243.75
Casper	286.23	140.00	386.33	277.98
Cody	287.78	130.00	405.47	279.17
Douglas	297.67	125.00	369.00	204.67
Evanston	375.46	199.00	465.20	408.50
Gillette	360.29	177.50	490.95	296.07
Greybull	235.83	76.50	269.17	200.00
Jackson	359.17	105.00	454.00	208.33
Kemmerer	380.45	146.67	447.06	367.86
Laramie	310.56	121.00	366.54	251.07
Lusk	253.13	90.00	239.29	251.43
Newcastle	265.56	86.25	287.50	257.00
Pinedale	318.75	132.50	423.75	411.25
Rawlins	331.67	122.50	276.50	241.25
Riverton	274.00	113.75	330.38	253.46
Rock Springs	370.65	159.13	451.47	393.95
Sheridan	273.13	130.00	331.16	201.00
Sundance	239.00	80.00	315.50	249.85
Thermopolis	295.00	125.00	305.00	271.07
Torrington	271.82	57.50	251.76	217.86
Wheatland	259.00	100.00	255.83	220.00
Worland	292.50	123.33	324.33	257.14

*Prepared by Research and Statistics, Department of Administration and Fiscal Control.

Wyoming Comparative Cost of Living Index* (April 2-4, 1986): Statewide Average = 100

City	Rank	All Items	Food	Housing	Transportation	Medical
Gillette	1	110.50	104.05	124.39	101.67	107.66
Jackson	2	110.03	99.71	121.07	105.36	100.56
Kemmerer	3	109.40	102.64	123.97	99.10	99.39
Evanston	4	108.25	98.90	121.13	107.19	98.26
Pinedale	5	105.94	103.96	110.08	101.41	104.32
Rock Springs	6	105.50	102.04	116.81	95.27	99.79
Casper	7	102.82	100.20	103.18	108.44	102.65
Sundance	8	101.56	109.57	102.70	96.10	105.70
Cheyenne	9	101.44	95.05	104.51	103.04	100.34
Cody	10	100.26	103.53	99.08	99.24	98.08
Douglas	11	99.45	100.06	98.21	97.08	105.78
Laramie	12	99.22	98.19	99.61	99.80	96.75
Sheridan	13	98.85	100.07	95.80	99.52	101.54
Worland	14	98.81	102.68	95.52	99.03	102.22
Riverton	15	96.73	92.11	96.16	101.52	99.96
Thermopolis	16	96.34	100.04	92.83	97.63	93.04
Wheatland	17	95.85	92.41	91.29	101.42	99.84
Newcastle	18	94.71	102.04	87.73	92.86	102.85
Buffalo	19	94.56	104.06	84.36	97.56	98.30
Rawlins	20	94.54	100.80	88.90	99.22	94.40
Greybull	21	93.59	101.54	83.45	96.66	98.25
Lusk	22	92.63	96.47	80.34	104.19	95.25
Torrington	23	89.01	89.90	78.88	96.68	95.07

*Apparel and Recreation indices not shown.

Source: Wyoming Department of Administration and Fiscal Control.

Format

For data available at least quarterly, the last 12 quarters are printed in MQU. In this edition, published series begin with the 2nd quarter of 1983, and end with the 1st quarter of 1986. For other data series (primarily annual), the most recent observations, up to 12, are published in MQU. Most annual data series will reappear in MQU only when updated, or about every fourth issue. Quarters are calendar quarters. For example, the 3rd quarter is composed of July, August, and September. In the table headings and narratives, a particular quarter will be indicated by notation such as 2/82 (2nd quarter, 1982), 1/82 (1st quarter, 1982), and so on.

Beside each data series name is an abbreviation in parentheses. The abbreviation indicates the units (such as dollars, tons, feet, miles, etc.) of the data. The key to the units abbreviations is below.

Throughout MQU, all data are for the state unless otherwise stated. The most recent year's data should be viewed as preliminary, due to revisions. The acronym "NA" signifies that information is not available.

The reader should be attentive to the footnotes at the bottom of pages, particularly those accompanying a data table. The footnotes help the reader to properly interpret the data, and they also indicate when more detailed (by subject or by area) data than that which is shown is available from ISR. A list of sources follows the footnotes.

Key to Units Abbreviations

MBF - Thousand Board Feet

TKWH - Thousand Kilowatt Hours

$ - Dollars

M$ - Millions of Dollars

B$ - Billions of Dollars

T$ - Thousands of Dollars

H$ - Hundreds of Dollars

ST - Short Tons

TST - Thousands of Short Tons

MCFD - Million Cubic Feet Per Day

TBPD - Thousands of Barrels Per Day

GL - Gallons

TCF - Thousands of Cubic Feet

KWH - Kilowatt Hours

TGL - Thousands of Gallons

HBBL - Hundreds of Barrels

HMCF - Hundreds of MCF Per Day

HST - Hundreds of Short Tons

$/ST - Dollars Per Short Ton

CRIS

Census Retrieval Information Service

P.O. Box 3925
Laramie, WY 82071
(307) 766-5141

Room 302
Emerson Building
Cheyenne, WY 82002
(307) 777-7504

U.S. Census information for Wyoming is handled by the Census Retrieval and Information Service (CRIS). CRIS issues printed reports of Wyoming Census data as well as handling specific requests. Much of the population and housing data from the 1980 Census is now available.

CRIS reports now available:

		PRICE
#82-8:	Age Distribution in Wyoming, 1980, August 1982, 120 pages. Analysis of age profiles in 5-year brackets. Wyoming: Comparison with USA and with 1970. Indications of net in-migration by age. Prediction of 1990 peak at ages 30-34. Counties: Maps of age distribution. Graphs of age profiles for each county. Cities: Age profile for each city.	No Charge
#5:	STF1, October 1981, 54 pages. 100% count data, 1980 population and housing: state, counties and cities.	No Charge
#6:	Laramie People Patterns, January 1982, 11 pages. Minority distribution in Laramie by zoning and by age of neighborhood.	No Charge
#83-5	May 1983, 29 pages. Labor in Wyoming, 1980, labor force participation; age of labor force occupations.	No Charge
#84-1	October 1984, 25 pages. Age and Type of Wyoming Housing, 1980, characteristics of single, multiple, and mobile housing units: age, renter-occupancy, vacancy, county growth effects.	No Charge
#84-2	December 1984, 21 pages. Poverty in Wyoming, 1980 Census, numbers and rates of groups of persons in Wyoming with 1979 income under poverty level.	No Charge

CRIS is a cooperative service provided by the Institute for Policy Research, University of Wyoming, and the Research and Statistics Division, Wyoming Department of Administration and Fiscal Control.

We are looking forward to assisting you in the future.

Judy Denison and C. Fred Doll
Institute for Policy Research
University of Wyoming

Whit Kiner
Research and Statistics Division
Department of Administration and
Fiscal Control

RECENTLY PUBLISHED WYOMING RELATED RESEARCH REPORTS

AN ECONOMIC ANALYSIS OF AN ENHANCED OIL RECOVERY PROCESS by Scott E. Atkinson	$2.50*
ANALYSIS OF THE IMPACT OF SEVERAL MANAGEMENT ALTERNATIVES FOR YELLOWSTONE NATIONAL PARK'S FISHING BRIDGE by Scott E. Atkinson, et. al.	$5.00*
ANALYSIS OF THE LONG-TERM IMPACTS AND BENEFITS OF GRAND TETON NATIONAL PARK ON THE ECONOMY OF TETON COUNTY, WYOMING by John Merrifield and Shelby Gerking	$5.00*
ANALYZING PROPERTY TAX ASSESSMENTS IN WYOMING by Shelby Gerking, Gillian Arnott and Martha Schilling	$4.00*
CHANGING ENERGY PRICES AND ECONOMIC RENTS: THE CASE OF WESTERN COAL by John M. Mutti and William E. Morgan	No Charge
COUNTY PROFILE HANDBOOK Edited by S.T. Mast	$5.00*
EXPORTATION OF STATE AND LOCAL TAXES: A COMPARATIVE ANALYSIS by Shelby Gerking, William Morgan and John Mutti	$5.00*
FALLING WORLD OIL PRICES AND THE ROLE OF RAILROADS IN THE MARKET FOR WYOMING COAL by Scott E. Atkinson and Joe Kerkvliet	$5.00*
POTENTIAL FOR COMMERCIAL AIR TRAVEL BY WYOMING STATE EMPLOYEES by Shelby Gerking and Amy Weber	$10.00*
SHIFTING, INCIDENCE, AND INTER-STATE EXPORTATION OF PRODUCTION TAXES ON ENERGY RESOURCES by William E. Morgan and John H. Mutti	No Charge
TAX RATES, REVENUES, COAL SALES, AND THE STATE'S WELFARE: WYOMING VS. MONTANA by Scott E. Atkinson	No Charge
THE ECONOMIC IMPACT OF LARAMIE COMMUNITY COLLEGE ON THE ECONOMY OF LARAMIE, COUNTY, WYOMING by Scott E. Atkinson and Joe Kerkvliet	No Charge
THE EXPORTATION OF STATE AND LOCAL TAXES IN A MULTILATERAL FRAMEWORK: THE CASE OF HOUSEHOLD TYPE TAXES by John H. Mutti and William E. Morgan	No Charge
THE STAGGERS ACT AND COMPETITION IN RAIL TRANSPORT OF WYOMING COAL by Scott E. Atkinson and Joe Kerkvliet	$5.00*
THE WYOMING ECONOMY: HISTORICAL TRENDS AND PROJECTIONS by Shelby Gerking and John Merrifield	No Charge
TRANSPORTATION CHARGES, PRODUCTION TAXES, AND SCRUBBER LEGISLATION: CONSEQUENCES FOR THE WYOMING COAL MARKETS by Scott Atkinson, Joe Kerkvliet, and Paulette Barclay	$2.00*
WYOMING'S NEAR-TERM ECONOMIC OUTLOOK: MODEST GROWTH FOR THE 1980'S by Shelby Gerking, S.T. Mast, Scott Atkinson	$2.00*

*Prices reflect reproduction costs only. In state subject to 3% sales tax.

HOW TO ORDER

Please mail your order together with payment (if necessary) to:

INSTITUTE FOR POLICY RESEARCH
Box 3925, University Station
Laramie, WY 82071
ATTN: Administrative Secretary

Thank You